



Statement on the making of
regulations in connection with the
award of 10 GHz, 28 GHz, 32 GHz
and 40 GHz

Statement

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Section 1

Summary

- 1.1 The Office of Communications ('Ofcom') has held three consultations, in January 2005, June 2006 and August 2007, and also published a discussion document in January 2007 in connection with the award of wireless telegraphy licences for use of the 10 GHz, 28 GHz, 32 GHz and 40 GHz spectrum bands. It has also published an Information Memorandum in respect of this award on 7 August 2007.
- 1.2 Ofcom has carefully considered the responses to these consultations, including those to the last consultation in August 2007 on the draft statutory instruments made in connection with the award.
- 1.3 Ofcom has now made the four statutory instruments and submitted them for registration and publication. They will come into force on 21 December 2007.
- 1.4 Ofcom is provisionally indicating in this Statement that it expects the date for receipt of applications to be 16 January 2008. The exact date will be confirmed by Ofcom via publication on its website after the statutory instruments have come into force.
- 1.5 The relevant section of the Ofcom website for information on Ofcom's spectrum award programme and the award of the Spectrum Bands is www.ofcom.org.uk/radiocomms/spectrumawards/.
- 1.6 Ofcom is making available other information relevant to this award alongside this Statement. This is as follows:
 - An explanatory note to accompany Schedules 8 and 9 of the Licence Award Regulations. This note is available at http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10_40/
 - A document setting out various amendments to the Information Memorandum published in August. This document is available at http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10_40/
- 1.7 Ofcom held a seminar on the auction rules and procedures on 12 November 2007. Ofcom does not plan to run any further seminars in relation to this award. There will however be training for bidders on use of the electronic auction system before the bidding process begins.

Section 2

Introduction

- 2.1 This Statement sets out Ofcom's decisions in relation to the statutory instruments it needs to make in connection with the award of wireless telegraphy licences for the use of the 10 GHz, 28 GHz, 32 GHz and 40 GHz spectrum bands (the "Spectrum Bands").
- 2.2 Ofcom published on 7 August 2007 a notice¹ of its proposal to make regulations and invited comments on these by 17 September 2007. Ofcom in reaching its decisions has carefully considered the submissions it has received.
- 2.3 The draft statutory instruments published for consultation in August 2007 (the "August Consultation") followed a previous consultation and decisions relevant to this award:
- The Spectrum Framework Review: Implementation Plan ("SFR: IP") consultation² published on 13 January 2005, which included outline proposals for the award of the Spectrum Bands.
 - A consultation on the detailed proposals for the award, published on 29 June 2006³ (the "June 2006 Consultation"), a seminar on 28 July 2006 and a discussion document on 11 January 2007⁴, followed by a statement⁵ on the subsequent decisions, published on 7 August 2007 (the "August Statement").
- 2.4 The Information Memorandum⁶ for this award (the "Information Memorandum") was also published on 7 August 2007.
- 2.5 The award of the Spectrum Bands is part of a programme of awards that was described in the SFR: IP Interim Statement. Further information on the spectrum awards programme can be found on Ofcom's website in its dedicated section:

www.ofcom.org.uk/radiocomms/spectrumawards/

Overview of responses to the August consultation

- 2.6 Ofcom received eight responses to the August consultation; a summary of these is provided at Annex 1. Six of these responses are available on Ofcom's website and the other two responses were submitted confidentially.
- 2.7 Most of the comments received in the responses fell broadly into the following categories:
- comments on the draft Regulations
 - comments on the Information Memorandum.

¹ See <http://www.ofcom.org.uk/consult/condocs/10-40notice/10-40notice.pdf>

² See <http://www.ofcom.org.uk/consult/condocs/sfrfp> for the consultation and the Interim Statement

³ See http://www.ofcom.org.uk/consult/condocs/10ghz/spec_condoc.pdf

⁴ See <http://www.ofcom.org.uk/consult/condocs/10-40GHz/10-40ghz.pdf>

⁵ See <http://www.ofcom.org.uk/consult/condocs/10-40GHz/statement/statement.pdf>

⁶ See http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10_40/10-40IM.pdf

- comments on the process and general policy matters.

Making and publication of the final regulations in connection with the award

- 2.8 Ofcom made the four statutory instruments relevant to this award on 30 November 2007. These will be available on the website of the Office of Public Sector Information (OPSI)⁷, under the titles listed at paragraph 3.2. Copies in draft form are also annexed to this statement for indicative purposes in the form submitted for registration and publication after their making by Ofcom. OPSI is the only authorised source for published statutory instruments.
- 2.9 Ofcom is also making available other information relevant to this award alongside this Statement. This is as follows:
- An explanatory note to accompany Schedules 8 and 9 of the Award Regulations. This note is available at http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10_40/
 - A document setting out various amendments to the Information Memorandum published in August. This document is available at http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10_40/

Document structure

- 2.10 Section 3 of this Statement provides further details of Ofcom's decisions following the August consultation.
- 2.11 Section 4 describes the next steps for the award.
- 2.12 Annex 1 provides a summary table of consultation responses.
- 2.13 Annex 2 includes draft copies of the four statutory instruments in the form submitted for registration and publication after their making by Ofcom.
- 2.14 Annex 3 includes copies of the Regulatory Impact Assessments for the four statutory instruments in the form placed in the libraries of both Houses of Parliament.

⁷ See <http://www.opsi.gov.uk>

Section 3

Ofcom's decisions following the August 2007 Consultation

- 3.1 In the August Consultation Ofcom gave notice of, and consulted on, its proposals to make regulations in connection with the award of wireless telegraphy licences for use of the Spectrum Bands.
- 3.2 The proposals included four draft statutory instruments, which can be briefly summarised as follows:
- The Wireless Telegraphy (Licence Award) (No.2) Regulations 2007 (the "licence award regulations") set out the process to be followed for the award of licences for use of the Spectrum Bands and the rules that will apply to that process.
 - The Wireless Telegraphy (Spectrum Trading) (Amendment) (No.2) Regulations 2007 provide the scope for subsequent transfers of licences in the Spectrum Bands, as described in the August Consultation.
 - The Wireless Telegraphy (Register) (Amendment) (No.2) Regulations 2007 set out the provisions necessary to allow the publication of details of the licences for use of the Spectrum Bands in the wireless telegraphy register.
 - The Wireless Telegraphy (Limitation of Number of Spectrum Access Licences) (No.2) Order 2007 sets out how the number of licences in the Spectrum Bands will be limited for the time being in accordance with the outcome of the award process.
- 3.3 Ofcom received eight responses to the August Consultation. Two contained comments on the licence award regulations. The other comments received related to the Information Memorandum, the auction design and process and general policy matters.
- 3.4 Ofcom received no comments about the provisions in the draft Wireless Telegraphy (Spectrum Trading) (Amendment) (No.2) Regulations 2007, the draft Wireless Telegraphy (Register) (Amendment) (No.2) Regulations 2007 or the draft Wireless Telegraphy (Limitation of Number of Spectrum Access Licences) (No.2) Order 2007.
- 3.5 Ofcom has carefully considered the responses to the consultation. This section sets out its responses to the main points in stakeholders' comments. A summary of the issues raised together with Ofcom's responses is shown in Annex 1.

The Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007

Eligibility points

- 3.6 A confidential respondent suggested that it would aid clarity if the licence award regulations made explicit that eligibility points apply neutrally to all the bands.

- 3.7 The significance of the regulations relating to eligibility points is that a bidder's eligibility limit constrains the lots that it may select in its primary round bids. The number of eligibility points associated with lots in each band is set out in Schedule 7 to the licence award regulations. Ofcom has set eligibility points to broadly reflect the relative size of lots and potential attractiveness of different frequency bands. The eligibility limit rule set out in the licence award regulations (regulation 15(7)) does not oblige a bidder to bid for the same selection of lots - or for lots in the same bands - in successive primary bid rounds. The bidder can choose any selection of lots, specifying lots in any of the bands, so long as it observes the eligibility limit rule. Ofcom does not consider that the regulations require amendment to make explicit that eligibility points are neutral as between bands.

Disclosure of information

- 3.8 A confidential respondent enquired about the disclosure of information relating to network sharing and whether this would fall within the definition of confidential information in the licence award regulations.
- 3.9 In determining in accordance with regulation 7 whether an applicant is qualified to bid in the award process, or whether a bidder has breached the activity rules set out in regulations 64 and 66 of the licence award regulations, Ofcom must take into account any disclosure of confidential information to persons outside an applicant's or bidder's bidder group (with certain specified exceptions). Ofcom considers that information about network sharing should not be excluded from the definition of 'confidential information'. Ofcom has discretion to determine whether an applicant is qualified to bid and whether a bidder should be excluded from the award process or forfeit its deposit. In exercising its discretion, Ofcom will be particularly concerned with whether the disclosure of confidential information is part of collusive behaviour or would materially affect the outcome of the award process.

Joint bidders

- 3.10 A confidential respondent enquired whether, if a number of parties were making a joint bid together, they would need to set up a separate bidding vehicle to act as a single 'body corporate' to apply to take part in the auction.
- 3.11 Parties who wish to make a joint bid in the award will need to form themselves into a body corporate. Under the licence award regulations only a body corporate may apply to Ofcom for a licence (regulation 4(1)).

40 GHz lots

- 3.12 T-Mobile was concerned that 50 km exclusion zones around two radio astronomy sites at Cambridge and Pickmere, which it estimates encompasses 13% of the UK population, would make four of the six 40 GHz lots significantly less valuable than the other two. It suggested that the four lots should be in a separate category from the other two so that bidders could choose whether or not to bid on them.
- 3.13 The position has changed since publication of the Information Memorandum and Ofcom can confirm that there will be an exclusion zone around Cambridge only. This zone covers a much smaller proportion of the UK population than had caused T-Mobile concern and Ofcom considers that its existence should not significantly affect the valuation of lots. If bidders who win 40 GHz lots in the principal auction stage prefer particular lots they will be able to express that preference in their assignment stage bids.

No further primary bid rounds

- 3.14 A confidential respondent asked for clarification of the circumstances under which Ofcom would invoke the provisions of regulation 16 (3) and (4) of the draft licence award regulations and not hold any further primary bid rounds.
- 3.15 These provisions are to be found in regulation 18(3) and (4) of the final licence award regulations. The drafting of the final provisions has been altered to clarify that Ofcom may only decide not to hold any further primary bid rounds where it is satisfied that it is unlikely that the information that would be made available to bidders following any further primary bid rounds would affect the determination of the winning combination of principal stage bids or the determination of the base prices payable by winning bidders.

Constraints on supplementary bids

- 3.16 A confidential respondent commented on the rule in regulation 26 that sets constraints on supplementary bids. It was concerned that there was the potential for bidders to bid on lots in a particular band up until and including the final primary bid round and then, through supplementary bids, switch their demand to lots in another band. It suggested that a supplementary bid on a selection of lots should be unconstrained only if the bidder had bid on that selection in the final primary bid round.
- 3.17 Ofcom considers it essential to the achievement of an efficient allocation of this spectrum that bidders be able to express the full range and value of selections of lots in which they are interested in the supplementary bids round. Only allowing each bidder one unconstrained supplementary bid, on the single selection of lots for which they bid in the final primary bid round, would not achieve this.
- 3.18 Ofcom has considered other possible changes to the rules to limit the extent to which bidders can express different preferences in the supplementary bids round to those that they expressed through their primary bids. Such rules are, however, considerably more complex than the simple eligibility points based rule previously proposed. Having given the matter careful consideration, Ofcom has decided that on balance the simpler eligibility points based rule is preferable in this case.

Interest on deposits

- 3.19 T-Mobile said that Ofcom should pay interest on deposits at the bank base rate.
- 3.20 Ofcom considers that, in this case, the timescale of the award process and level of deposits required will mean that any interest accruing is unlikely to be material when set against the cost of administering its payment to applicants.

Base price calculation

- 3.21 A confidential respondent said that the rule for calculation of the base price set out in Schedule 8 to the licence award regulations could result in two different bidders both winning licences but paying different amounts (e.g. one bidder paying very nearly its own valuation or bid, while another bidder could pay significantly less than its winning bid).
- 3.22 Ofcom acknowledges that in some circumstances different winning bidders may pay different amounts for essentially identical licences. For this to happen however, the

bids made by the two bidders must differ in some way – either different winning bids or different non-winning bids. If both bidders make exactly the same bids, and both win, then they will both be required to pay the same base price for their licences.

- 3.23 If on the other hand one or more of the bids made by the two winning bidders differ, it may be the case that the base prices that apply to them will also differ, even if the licences that they are awarded are essentially the same. In all such cases however, the base price payable by each winning bidder will be a fair reflection of the bids made by that bidder and others; fair in the sense that the winning bidders will, collectively, pay no more than is necessary to beat the losing bidders, and the amount that each winning bidder has to pay will be as near as possible to the opportunity cost of their winning bid.

Testing the auction design

- 3.24 A confidential respondent said that the proposed auction design was untested and that Ofcom should have undertaken more work to establish its appropriateness. Also, Ofcom should have allowed bidders to take part in a mock or trial auction.
- 3.25 Ofcom has undertaken testing of the auction design with the assistance of Professor Peter Cramton. Ofcom held a mock auction on 15 and 16 November 2007 in which interested parties were able to participate.

Information Memorandum

Timing of rounds

- 3.26 T-Mobile expressed concern that the Information Memorandum had suggested that there could be up to twelve auction rounds per day and that the notice period for rounds could be fifteen minutes. They considered that this might not provide sufficient time for bidders to participate in the auction.
- 3.27 The figure in the Information Memorandum of twelve auction rounds per day was only an indication of the maximum number of rounds that could possibly be held in a day. Ofcom considers that the likely number of rounds to be held each day will, in practice, be less than this. Fifteen minutes is the minimum notice period that will be given for the start of a round. Also as explained at the seminar on 12 November, we do not expect to run primary bid rounds for less than 15 minutes or longer than 60 minutes.

Power levels

- 3.28 Thales suggested that references in the Information Memorandum to linear interpolation refer to 'linear interpolation of the power levels expressed in decibels'.
- 3.29 Ofcom notes the comments about the expression of the power levels in dBW/MHz and the use of linear interpolation between these power levels, but as the description in the draft licence is in dBW/MHz it considers that this is sufficiently clear to avoid doubt.

International coordination

- 3.30 Transfinite and a confidential respondent raised technical questions of clarity regarding paragraph 3.34 of the Information Memorandum, which dealt with international coordination for terrestrial services in the 10, 28, 32 and 40 GHz bands.

3.31 In order to provide greater clarity Ofcom has revised the information in paragraph 3.34 of the Information Memorandum as follows:

“For the time being, Licensees awarded Paired Frequency Ranges in these Bands which they use for terrestrial services will be notified by Ofcom under paragraph 6 of the Schedule to their Licences that they must comply with the following requirements:

- Limit: spectrum flux density (PFD) not exceeding $-115 \text{ dBW}/(\text{MHzxm}^2)$ at or beyond the geographical border of the neighbouring territory.
- Calculation; based on free space paths loss propagation⁸ and an atmospheric attenuation figure taken from annex 2, Figure 5 of ITU-R Recommendation p.676.
- Where a licensee can show that the pfd level can be met by demonstrating, via the use of an appropriate propagation model, that the pdf will not be exceeded, Ofcom will consider these instances on a case by case basis.”

Out of band emissions

3.32 The Radio Society of Great Britain ('RSGB') requested that Ofcom confirm that modifications to masks or out of band emissions only apply to merging lots within auction segments and do not permit an increase in out of band emissions outside of the auction bands.

3.33 Ofcom considers it reasonable to relax the out of block limits where narrow beam antennas are used. On balance Ofcom does not consider that this change disproportionately alters the potential for interference for users adjacent to the blocks under the award. This is the upper limit for the out of block limits and is unlikely to be reached in all deployments, and this in conjunction with the use of narrow beam antennas further limits the potential for interference.

Other comments received

Timing of auction start

3.34 A confidential respondent suggested that the start of the auction should be delayed until January 2008 to avoid the Christmas holiday period and in view of the current uncertain conditions of the markets.

3.35 At present Ofcom expects the application date to be 16 January 2008 and the auction to run from early February 2008.

3.36 T-Mobile suggested that the auction should not proceed until the Floe case (1024/2/3/04) has been decided by the Court of Appeal and the legal effect of the terms of the licence is clear.

3.37 Ofcom considers that it is unrealistic to expect that all areas of regulatory uncertainty will be removed prior to the auction. Ofcom also considers that it is in the interests of citizens and consumers to proceed with the auction as proposed rather than to delay

⁸ By using $L_{FS} = 94.442 + 20\text{Log}_{10}f_{\text{GHz}} + 20\text{Log}_{10}d_{\text{km}}$ where L_{FS} = Free space path loss in dB, f_{GHz} = frequency in GHz, d_{km} = distance in km.

it on the grounds of seeking to reduce regulatory risk (which may, in any event, be unachievable).

Site clearance procedures

- 3.38 T-Mobile suggested that the draft Wireless Telegraphy Act licence could be revised to reflect the recent changes in Ofcom's site clearance procedure.
- 3.39 A draft Wireless Telegraphy Act licence was published in the Information Memorandum for this award. Ofcom is publishing an update of the Memorandum on its website, alongside this statement, which includes an amended draft licence that reflects the changes to the site clearance procedure.

Amateur radio use of 10 GHz

- 3.40 Two responses were received from amateur radio users, who had concerns that the auction of the 10 GHz frequencies adversely affect the amateur use of the band.
- 3.41 The amateur and amateur satellite service is permitted, as a secondary service, on a non-interference and non-protected basis, in the 10.0 to 10.125, 10.225 to 10.475 GHz and 10.450 to 10.500 GHz bands. Ofcom has not changed this allocation or sought to change it as a result of the proposed auction of the 10 GHz spectrum.

Changes made to the drafting of the licence award regulations

- 3.42 Ofcom has not changed its policy on the design of the award process in any major respect since the August Consultation. However, the final version of the licence award regulations contains some differences from the version published in the August Consultation. For the most part, these differences are changes to the organisation of material in the regulations or to the drafting of particular rules of the award process, but in a few cases Ofcom has decided to make what it considers to be minor changes to the design of the award process and the drafting of the licence award regulations has been revised accordingly.
- 3.43 The minor changes to the design of the award process are:
- Where there is only one bidder, there will be a 'cap' on the total amount of frequencies that can be assigned to that bidder. This rule is implemented in the provisions of regulation 11(2)(c) of Part 4, which restricts the maximum price of the paired frequency ranges selected by the bidder.
- The draft licence award regulations published in the August Consultation contained a 'cap' at the same level in respect of the procedure where there is more than one bidder (set out in Part 5 of the regulations). This has not been changed in respect of the Part 5 procedure. Ofcom introduced the 'cap' in order to ensure that all of the available spectrum would not be won by a single bidder. It considers that this consideration applies where there is only one bidder and so has decided that the 'cap' should also be applied to the Part 4 procedure.
- Also in respect of the process applying where there is only one bidder, Ofcom has decided that in circumstances where all of the selections of paired frequency ranges made by a bidder are rejected by Ofcom because of incompleteness or defect in respect of the paired frequency range selection menu completed by the bidder, the bidder's deposit should be forfeited. The provision giving effect to this rule is regulation 11(8). This rule is consistent with regulation 11(7)(b), which

provides that the bidder's deposit is to be forfeited where the entire paired frequency range selection menu is rejected by Ofcom because of incompleteness or defect.

- The draft licence award regulations, in respect of supplementary bids made during the procedure set out in Part 5 of the regulations ('Procedure where there is more than one bidder'), provided that the number of supplementary bids that a bidder could make for selections of lots that it had not bid for in primary bid rounds should be limited to a maximum of 200. Ofcom has decided that there should be no maximum limit on the number of such supplementary bids that a bidder may make. In developing the auction software further Ofcom has now found that there is no operational reason to limit the number of supplementary bids submitted and has created a simple means by which bidders can enter more than 200 bids. Accordingly, it considers that each bidder should have the opportunity to submit as many supplementary bids as it wishes in this auction.

3.44 Schedules 8 and 9 of the licence award regulations set out the requirements that must be met in the determination of base prices and additional prices. These have not changed in substance from the schedules to the draft regulations but we have clarified the drafting. When making the regulations Ofcom published on its website an explanatory note on the existence and uniqueness of base and additional prices (see http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10_40/).

Section 4

Next steps

- 4.1 Ofcom made the four statutory instruments in connection with the award process on 30 November 2007 and they will come into force on 21 December 2007. Drafts of these statutory instruments are annexed to this Statement in the form submitted for registration and publication after their making by Ofcom for indicative purposes. The statutory instruments will be officially published on OPSI's website in due course at www.opsi.gov.uk.
- 4.2 Ofcom provisionally expects the date for receipt of application forms to be 16 January 2008. Ofcom will publish the exact date and times on its website at: www.ofcom.org.uk/radiocomms/spectrumawards/, once the Licence Award Regulations have come into force.
- 4.3 All relevant information and documents relating to the award of the Spectrum Bands will be published at www.ofcom.org.uk/radiocomms/spectrumawards/. For example, Ofcom will make electronic versions of the application forms available for download, once they are available, in the form prescribed by the Schedules to the Wireless Telegraphy (Licence Award) (No.2) Regulations 2007.
- 4.4 Section 4 of the Information Memorandum includes a flowchart that illustrates the various stages of the award process. The duration of the process will depend on the requirement for an auction stage and the number of primary bid rounds in the auction. Ofcom expects the bidding process to begin in early February 2008.

Annex 1

Summary of responses to the August consultation

- A1.1 Ofcom received eight responses to the August consultation.
- A1.2 This Annex sets out a summary of stakeholders' submissions and Ofcom's responses. Most points are addressed in detail in section 3 of this Statement.

Issue raised	Comments	Ofcom's response
Eligibility points associated with lots	A confidential respondent suggested that it would aid clarity if the auction regulations made explicit that eligibility points apply neutrally to all bands.	The significance of the regulations relating to eligibility points is that a bidder's eligibility limit constrains the lots that it may select in its primary round bids. The number of eligibility points associated with lots in each band is set out in Schedule 7 to the licence award regulations. Ofcom has set eligibility points to broadly reflect the relative size of lots and potential attractiveness of different frequency bands. The eligibility limit rule set out in the licence award regulations (regulation 15(7)) does not oblige a bidder to bid for the same selection of lots - or for lots in the same bands - in successive primary bid rounds. The bidder can choose any selection of lots, specifying lots in any of the bands, so long as it observes the eligibility limit rule. Ofcom does not consider that the regulations require amendment to make explicit that eligibility points are neutral as between bands.
Determination of eligibility points associated with lots	A confidential respondent also felt that it was unclear how the eligibility point ratios had been determined for each band	The determination of the eligibility points associated with lots was discussed in paragraph A2.3 of the Discussion Document titled 'Award of available spectrum: 10 GHz, 28 GHz, 32 GHz and 40 GHz' published on 11 January 2007.
International coordination (re paragraph 3.34 of the Information Memorandum).	<p>A confidential respondent was concerned that the calculation method for the PDF limits described in the second bullet appeared unclear.</p> <p>Transfinite suggested that the first bullet would be clearer if it was indicated which low tide coastline should be used.</p>	In order to provide greater clarity Ofcom have revised the information in paragraph 3.34 of the Information Memorandum. Please see paragraph 3.31 of this Statement for further details.

	Transfinite suggested that the text in the second bullet could say "Calculation: based on the ITU –R Rec.P.452-12 at 10% of time"	
Technical issues –clarification of term used in the Information Memorandum	Thales suggested that references to linear interpolation refer to 'linear interpolation of the power levels expressed in decibels'.	Ofcom note the comments about the expression of the power levels in dBW/MHz and the use of linear interpolation between these power levels, but as the description in the draft licence is in dBW/MHz Ofcom feel that this is sufficiently clear to avoid doubt.
Technical issues - clarification of out of band transmissions	The RSGB requested that Ofcom confirm that modifications to masks or out of band emissions only apply to merging lots within auction segments, and do not permit an increase in out of band emissions outside of the auction bands.	Ofcom considers it reasonable to relax the out of block limits where narrow beam antennas are used. On balance Ofcom does not consider that this change disproportionately alters the potential for interference for users adjacent to the blocks under the award. This is the upper limit for the out of block limits and is unlikely to be reached in all deployments, and this in conjunction with the use of narrow beam antennas further limits the potential for interference.
Auction design	T-Mobile was concerned that 50 km exclusion zones around two radio astronomy sites at Cambridge and Pickmere, which it estimates encompasses 13% of the UK population, would make four of the six 40 GHz lots significantly less valuable than the other two. It suggested that the four lots should be in a separate category from the other two so that bidders could choose whether or not to bid on them.	The position has changed since publication of the Information Memorandum and Ofcom can confirm that there will be an exclusion zone around Cambridge only. This covers a much smaller proportion of the UK population than had caused T-Mobile concern and Ofcom considers that its existence should not significantly affect the valuation of lots. If bidders who win 40 GHz lots in the principal auction stage prefer particular lots they will be able to express that preference in their assignment stage bids.
Auction - Timing	A confidential respondent suggested that the start of the auction should be delayed until January 2008 to avoid the Christmas holiday period and in view of the current uncertain conditions of the markets	At present Ofcom provisionally expects the application date to be 16 January 2008 and the auction to run from early February 2008.

	<p>T-Mobile suggested that the auction should not proceed until the Floe case (1024/2/3/04) has been decided by the Court of Appeal and the legal effect of the terms of the licence is clear</p>	<p>Ofcom considers that it is unrealistic to expect that all areas of regulatory uncertainty will be removed prior to the auction. Ofcom also considers that it is in the interests of citizens and consumers to proceed with the auction as proposed rather than to delay it on the grounds of seeking to reduce regulatory risk (which may, in any event, be unachievable).</p>
<p>Auction – termination of primary bid rounds</p>	<p>A confidential respondent asked for clarification of the circumstances under which Ofcom would invoke the provisions of paragraph 16 (3) and (4) of the draft regulations and not hold any further primary bid rounds</p>	<p>These provisions are to be found in regulation 18(3) and (4) of the final licence award regulations. The drafting of the final provisions has been altered to clarify that Ofcom may only decide not to hold any further primary bid rounds where it is satisfied that it is unlikely that the information that would be made available to bidders following any further primary bid rounds would affect the determination of the winning combination of principal stage bids or the determination of the base prices payable by winning bidders.</p>
<p>Auction – number of rounds per day</p>	<p>T-Mobile expressed concern that there could be up to twelve auction rounds per day and that the notice period for rounds could be fifteen minutes. They considered that this may not provide sufficient time for bidders to properly participate in the auction.</p>	<p>The figure in the Information Memorandum of twelve auction rounds per day was only an indication of the maximum number of rounds that could possibly be held in a day. Ofcom considers that the likely number of rounds to be held each day will, in practice, be less than this. Fifteen minutes is the minimum notice period that will be given for the start of a round.</p>
<p>Auction - bidding</p>	<p>A confidential respondent commented on the rule in regulation 26 that sets constraints on supplementary bids. It was concerned that there was the potential for bidders to bid on lots in a particular band up until and including the final primary bid round and then, through supplementary bids, switch their demand to lots in another band. It suggested that a supplementary bid on a selection of lots should be unconstrained only if the bidder had bid on that selection in the final primary bid round.</p>	<p>Ofcom considers it essential to the achievement of an efficient allocation of this spectrum that bidders be able to express the full range and value of selections of lots in which they are interested in the supplementary bids round. Only allowing each bidder one unconstrained supplementary bid, on the single selection of lots for which they bid in the final primary bid round, would not achieve this.</p> <p>Ofcom has considered other possible changes to the rules to limit the extent to which bidders can express different preferences in the supplementary bids round to those that they expressed through their primary bids. Such rules are, however, considerably more complex than the simple eligibility points based rule previously proposed. Having given the matter careful consideration, Ofcom has decided that on balance the simpler eligibility points based rule is preferable in this case.</p>

<p>Auction – Calculation of base and additional price</p>	<p>A confidential respondent suggested that Ofcom provide worked examples of the calculation of the base price and additional price.</p>	<p>Ofcom has published alongside the award Regulations an explanatory document relating to the requirements of Schedule 8 (Determination of base price) of the award regulations and Schedule 9 (Determination of additional price).</p>
	<p>Another confidential respondent said the rule for calculation of the base price set out in Schedule 8 to the licence award regulations could result in two different bidders both winning licences but paying different amounts (e.g. one bidder paying very nearly its own valuation or bid, while another bidder could pay significantly less than its winning bid).</p>	<p>Ofcom acknowledges that in some circumstances different winning bidders may pay different amounts for essentially identical licences. For this to happen however, the bids made by the two bidders must differ in some way – either different winning bids or different non-winning bids. If both bidders make exactly the same bids, and both win, then they will both be required to pay the same base price for their licences.</p> <p>If on the other hand one or more of the bids made by the two winning bidders differ, it may be the case that the base prices that apply to them will also differ, even if the licences that they are awarded are essentially the same. In all such cases however, the base price payable by each winning bidder will be a fair reflection of the bids made by that bidder and others; fair in the sense that the winning bidders will, collectively, pay no more than is necessary to beat the losing bidders, and the amount that each winning bidder has to pay will be as near as possible to the opportunity cost of their winning bid.</p>
<p>Auction – deposits and forfeiture of deposits</p>	<p>A confidential respondent asked for clarification of whether the entire deposit will, or could, be forfeit not only for transgression of the activity rules (as provided for in regulations 64 and 66 of the licence award regulations) but also, for example, failing to successfully increase the relevant bid deposit as required.</p>	<p>Applicants and bidders should ensure that they carefully read the provisions of the Wireless Telegraphy (Licence Award) (No.2) Regulations 2007. In respect of the procedure where there is more than one bidder set out in Part 5 of the Regulations, there are provisions for the forfeiture of a bidder's deposit in the following circumstances:</p> <ul style="list-style-type: none"> • where a bidder fails to make a valid primary bid in the first primary bid round (regulation 16); • where a bidder fails to pay the total amount due by way of final principal stage deposit (regulation 40(2)); • where a bidder does not pay the total amount due by way of licence fee (regulation 61(4)).
	<p>T-Mobile said that Ofcom should pay interest on deposits at the bank base rate.</p>	<p>Ofcom considers that, in this case, the timescale of the award process and level of deposits required will mean that any interest accruing is unlikely to be material when set against the cost of administering its payment to applicants.</p>

Auction – joint bidders	A confidential respondent enquired whether, if a number of parties were making a joint bid together, they would need to set up a separate bidding vehicle to act as a single 'body corporate' to apply to take part in the auction.	Parties who wish to make a joint bid in the award will need to form themselves into a body corporate. Under the licence award regulations only a body corporate may apply to Ofcom for a licence (regulation 4(1)).
Auction design	A confidential respondent said that the proposed auction design was untested and that Ofcom should have undertaken more work to establish its appropriateness. Also Ofcom should have allowed bidders to take part in a mock or trial auction.	Ofcom has undertaken testing of the auction design with the assistance of Professor Peter Cramton. Ofcom held a mock auction on 15 and 16 November 2007 in which interested parties were able to participate.
Wireless Telegraphy Act Licence	T-Mobile suggested that the draft Wireless Telegraphy Act licence could be revised to reflect the recent changes in Ofcom's site clearance procedure	A draft Wireless Telegraphy Act licence was published in the Information Memorandum for this award. Ofcom is publishing an update of the Memorandum on its website, alongside this statement, which includes an amended draft licence that reflects the changes to its site clearance procedure.
Auction regulations - activity rules	A confidential respondent enquired about the disclosure of information relating to network sharing and whether this would fall within the definition of confidential information	In determining in accordance with regulation 7 whether an applicant is qualified to bid in the award process, or whether a bidder has breached the activity rules set out in regulations 64 and 66 of the licence award regulations, Ofcom must take into account any disclosure of confidential information to persons outside an applicant's or bidder's bidder group (with certain specified exceptions). Ofcom considers that information about network sharing should not be excluded from the definition of 'confidential information'. Ofcom has discretion to determine whether an applicant is qualified to bid and whether a bidder should be excluded from the award process or forfeit its deposit. In exercising its discretion, Ofcom will be particularly concerned with whether the disclosure of confidential information is part of collusive behaviour or would materially affect the outcome of the award process.
Radio amateur concerns	Mr K Hendrickson felt that the needs of amateurs using the 10 GHz band had not been considered.	The amateur and amateur satellite service is permitted, as a secondary service, on a non-interference and non-protected basis, in the 10.0 to 10.125, 10.225 to 10.475 GHz and 10.450 to 10.500 GHz bands. Ofcom has not changed this allocation or sought to change it as a result of the proposed auction of the 10 GHz spectrum.

	<p>Mr J Ferrier felt that amateur transmissions within the 10 GHz band should be protected so that UK amateurs can maintain scientific development through international contacts via satellite.</p>	
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Annex 2

Draft statutory instruments

A2.1 This annex includes a copy of the statutory instruments as made by Ofcom on 30 November 2007 and in the form submitted for registration and publication. These are marked as draft because OPSI is the only authorised source for published statutory instruments.

A2.2 The statutory instruments are:

- The Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007;
- The Wireless Telegraphy (Spectrum Trading) (Amendment) (No. 2) Regulations 2007;
- The Wireless Telegraphy (Register) (Amendment) (No. 2) Regulations 2007; and
- The Wireless Telegraphy (Limitation of Number of Spectrum Access Licences) (No. 2) Order 2007.

DRAFT

S T A T U T O R Y I N S T R U M E N T S

2007 No.

ELECTRONIC COMMUNICATIONS

**The Wireless Telegraphy (Licence Award) (No. 2) Regulations
2007**

Made - - - - - *30th November 2007*

Coming into force - - - - - *21st December 2007*

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The Office of Communications (“OFCOM”) make the following Regulations in exercise of the powers conferred on OFCOM by section 14(1), (2), (3), (4), (6) and (7) and section 122(7) of the Wireless Telegraphy Act 2006(a) (“the 2006 Act”).

Before making these Regulations OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the 2006 Act, published notice of their proposal in accordance with section 122(4)(b) of the 2006 Act and have considered the representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the 2006 Act.

PART 1

INTRODUCTORY

Citation, commencement and extent

- 1.—(1) These Regulations may be cited as the Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007 and shall come into force on 21 December 2007.
- (2) These Regulations shall not extend to the Channel Islands or to the Isle of Man.

Interpretation

- 2.—(1) In these Regulations—
- “additional price” has the meaning given in regulation 58;
- “applicant” means a body corporate making an application for a licence;
- “assignment stage” has the meaning given in regulation 14(1);
- “assignment stage bid” has the meaning given in regulation 46(4);
- “assignment stage bid form” has the meaning given in regulation 46(8);
- “assignment stage round” has the meaning given in regulation 46(2);
- “associate” means, in relation to an applicant or bidder, a person who has a material interest in that applicant or bidder;

(a) 2006 c.36.

“authorised person” means a person specified by an applicant in its application as authorised to bind that applicant for all purposes relating to the award process;

“available total” has the meaning given in regulation 14(4);

“base price” has the meaning given in regulation 42;

“bid total” has the meaning given in regulation 18(1);

“bidder” means an applicant which has qualified to bid in the award process and which has not withdrawn from the award process on or before the last day for withdrawal;

“bidder group” means, in relation to an applicant or bidder—

- (a) that applicant or bidder;
- (b) each associate of that applicant or bidder; and
- (c) each person in respect of whom the applicant or bidder has delivered to OFCOM a completed document in the form set out in Schedule 4;

“confidential information” means, in relation to any applicant or bidder, any information which is not in the public domain and which if it were made public, or disclosed to another applicant (or potential applicant) or bidder or a member of their respective bidder groups, would be likely to affect decisions that such other applicant (or potential applicant) or bidder may make in relation to the award process;

“deadline”, in relation to any requirement imposed on any person by or under these Regulations, means (as the case may require)—

- (a) the time,
- (b) the date, or
- (c) the date, and the time on that date,

by which that requirement must be fulfilled by that person;

“electronic auction system” means the system established by OFCOM for bidders to participate in the award process;

“end of round time” has the meaning given in regulation 27(2);

“grant stage” has the meaning given in regulation 14(1);

“initial deposit” shall be construed in accordance with regulation 4(3)(b);

“last day for withdrawal” has the meaning given in regulation 9(1);

“licence” means a wireless telegraphy licence to be granted pursuant to these Regulations to establish or use a wireless telegraphy station or instal or use wireless telegraphy apparatus in the United Kingdom at frequencies to be determined in accordance with the procedure set out in Part 4 or Part 5 of these Regulations;

“material interest” means, whether held directly or indirectly—

- (a) any interest (construed in accordance with sections 820 to 825 of the Companies Act 2006(a)) in—
 - (i) any share which carries, or any shares which together carry, more than twenty five per cent. of the votes entitled to be cast at a general meeting of the applicant or bidder; or
 - (ii) any share or shares in the case of which the consent of the holder of that share or those shares is required for the conduct of any business of the applicant or bidder; or
- (b) the right to appoint or remove a majority of the applicant’s or bidder’s board of directors;

“OFCOM’s bank account” means the bank account nominated by OFCOM for the purposes of the award process, details of which are published on their internet website;

“paired frequency range selection form” has the meaning given in regulation 45(3);

(a) 2006 c.46.

“paired frequency range selection menu” shall be construed in accordance with regulation 11(1);

“pounds” means pounds sterling;

“primary bid” has the meaning given in regulation 15(1);

“primary bid form” has the meaning given in regulation 15(3);

“primary bid rounds” has the meaning given in regulation 14(2);

“principal stage” has the meaning given in regulation 14(1);

“principal stage bid” means a primary bid or a supplementary bid;

“round” means a period of time specified by OFCOM during which bidders may make bids in accordance with the procedure set out in Part 5 of these Regulations;

“round price” has the meaning given in regulation 15(2);

“selection of lots” means a specified number of lots in one or more bands;

“supplementary bid” has the meaning given in regulation 17(1);

“supplementary bids form” has the meaning given in regulation 17(3);

“supplementary bids round” has the meaning given in regulation 14(2);

“valid assignment stage bid” has the meaning given in regulation 49(1);

“valid primary bid” has the meaning given in regulation 24(1);

“valid principal stage bid” means a valid primary bid or a valid supplementary bid;

“valid supplementary bid” has the meaning given in regulation 25(1);

“winning assignment stage bid” shall be construed in accordance with regulation 57;

“winning bidder” means a bidder that submitted a winning principal stage bid; and

“winning principal stage bid” shall be construed in accordance with regulation 41.

(2) A reference in these Regulations to a “band”, “lot” or “paired frequency range” shall be construed in accordance with Schedule 1.

PART 2

APPLICATION STAGE

Applications for the grant of a licence

3. Applications for the grant of a licence shall only be made in accordance with the procedure set out in these Regulations.

Application

4.—(1) Only a body corporate may apply to OFCOM for a licence.

(2) A body corporate may only make one application.

(3) To apply for a licence, a body corporate must—

(a) on the day specified by OFCOM for receipt of applications, deliver to OFCOM at Riverside House, 2a Southwark Bridge Road, London SE1 9HA within the times on that day specified by OFCOM a sealed envelope containing—

(i) a document containing the application information required by Schedule 2, completed in respect of the applicant and signed on its behalf by two authorised persons;

(ii) a document in the form set out in Schedule 3, completed in respect of the applicant and signed on its behalf by two authorised persons;

- (iii) for each person, not being an associate of the applicant, which the applicant wishes to join its bidder group, a document in the form set out in Schedule 4 which has been—
 - (aa) completed by the applicant and signed on its behalf by two authorised persons; and
 - (bb) completed by and signed by or on behalf of the person in respect of whom that document is completed; and
 - (b) by the deadline specified by OFCOM, pay into OFCOM's bank account by a same day electronic transfer, with accompanying information which identifies the applicant, an initial deposit of twenty-five thousand pounds.
- (4) OFCOM shall publish the day, times and deadline on their internet website no later than one week before whichever is the earlier of that day or that deadline.

PART 3

QUALIFICATION STAGE

Assessment of bidder groups

- 5.**—(1) OFCOM shall give notice to each applicant of—
- (a) the name of each other applicant and the names of their associates; and
 - (b) the deadline by when each applicant must notify OFCOM under paragraph (3) or (4) (as the case may be).
- (2) On receipt of that notice, each applicant must examine the names of the other applicants and their associates and determine whether any member of its bidder group is also an associate of another applicant or is also an applicant.
- (3) Where an applicant determines that a member of its bidder group is also an associate of another applicant or is also an applicant, it must notify the other applicant and OFCOM of that fact by the deadline specified by OFCOM, and OFCOM shall specify a further deadline by when each applicant concerned must—
- (a) notify OFCOM of any change in circumstances the effect of which is that no member of its bidder group is an associate of another applicant or is an applicant; and
 - (b) where changes have occurred to its bidder group, provide OFCOM with versions of the documents provided under regulation 4(3)(a)(i) and (ii) which comply with those provisions in the changed circumstances.
- (4) Where an applicant determines that no member of its bidder group is an associate of another applicant or is an applicant it must notify OFCOM of that fact by the deadline specified by OFCOM.
- (5) If it appears to OFCOM from any application that a member of one bidder group is also a member of another bidder group, OFCOM shall give notice to each of the applicants concerned of that fact and specify the deadline by when each applicant concerned must—
- (a) notify OFCOM of any change in circumstances the effect of which is that no member of its bidder group is also a member of another bidder group; and
 - (b) where changes have occurred to its bidder group provide OFCOM with versions of the documents provided under regulation 4(3)(a)(i) and (ii) which comply with those provisions in the changed circumstances.
- (6) OFCOM shall record the members of each applicant's bidder group as soon as reasonably practicable after the last deadline specified by OFCOM under paragraphs (3) and (5).

Subsequent changes to bidder groups

6.—(1) An applicant or a bidder may change its bidder group after the recording by OFCOM of the members of each applicant's bidder group.

(2) Where the change involves the addition or removal of an associate, the applicant or bidder must notify OFCOM of the change and submit versions of the documents provided under regulation 4(3)(a)(i) and (ii) which comply with those provisions in the changed circumstances.

(3) To add a person who is not an associate of the applicant or bidder to its bidder group, the applicant or bidder must deliver to OFCOM a document in the form set out in Schedule 4 completed by the applicant or bidder and signed on its behalf by two authorised persons and completed by and signed by or on behalf of the person in respect of whom that document is completed.

Determination of applicants which are qualified to bid

7.—(1) OFCOM shall determine whether each applicant which has submitted an application in accordance with regulation 4 is qualified to bid in the award process.

(2) An applicant shall not be qualified to bid in the award process if a member of its bidder group is also a member of another applicant's bidder group.

(3) In making their determination under paragraph (1) OFCOM shall take into account whether —

- (a) the grant of a licence to the applicant would be prejudicial to the interests of national security;
- (b) the applicant is a fit and proper person to hold a licence having regard to the probity of —
 - (i) the applicant;
 - (ii) each member of the applicant's bidder group; and
 - (iii) each director of each member of the applicant's bidder group;
- (c) any of the information submitted to OFCOM by the applicant in connection with the award process is false or misleading;
- (d) any member of the applicant's bidder group has colluded or attempted to collude, or is colluding or attempting to collude, with another person to distort the outcome of the award process;
- (e) any member of the applicant's bidder group has acted or is acting in a way which is likely to distort the outcome of the award process;
- (f) any member of the applicant's bidder group, or any person to whom confidential information has been disclosed, has disclosed, or is disclosing or attempting to disclose, or has incited or is inciting another person to disclose, any confidential information, whether directly or indirectly, to any person, except where the disclosure is—
 - (i) to OFCOM;
 - (ii) to a member of the applicant's bidder group;
 - (iii) to a provider of finance for the purpose of raising finance for the applicant's application; or
 - (iv) to a person for the purpose of enabling that person to decide whether to participate as a member of the applicant's bidder group;
- (g) any member of the applicant's bidder group has obtained or is obtaining or attempting to obtain confidential information relating to another applicant;
- (h) any member of the applicant's bidder group is receiving or is attempting to receive services in relation to the award process from any person who has provided or is providing services to OFCOM in relation to the award process; and
- (i) any person who is a member or a director or employee of a member of the applicant's bidder group and is also a director or employee of a member of another bidder group is—

- (i) taking part in the preparation of both bidder groups for participation in the award process; or
- (ii) receiving confidential information relating to both bidder groups.

(4) Applicants must, if requested to do so by OFCOM, provide by a deadline specified by OFCOM any information or documentation which OFCOM reasonably require to make their determination.

(5) If an applicant does not provide such information or documentation by the deadline specified by OFCOM, OFCOM shall also take that fact into account in making their determination.

(6) Where OFCOM determine that an applicant is not qualified to bid in the award process, that applicant's initial deposit shall not be forfeited for that reason.

Publication of determination

8.—(1) OFCOM shall notify each applicant of their determination under regulation 7(1).

(2) OFCOM shall also notify each applicant qualified to bid of the name of each other applicant which is so qualified and shall publish the names of all applicants which are qualified to bid on OFCOM's internet website.

Withdrawal of an application

9.—(1) OFCOM shall notify each applicant qualified to bid of the last day for withdrawal from the award process ("last day for withdrawal") and shall publish the last day for withdrawal on OFCOM's internet website.

(2) If, on or before the last day for withdrawal, OFCOM receive notice of an applicant's intention to withdraw its application, signed by two authorised persons of that applicant, the application shall be withdrawn and the applicant shall be excluded from the award process and OFCOM shall notify all other applicants of the withdrawal.

(3) Where an applicant withdraws its application in accordance with paragraph (2)—

- (a) that applicant shall not be re-admitted to the award process; and
- (b) that applicant's initial deposit shall not be forfeited for that reason.

Determination of number of bidders

10.—(1) After the last day for withdrawal, OFCOM shall determine the number of bidders.

(2) Where there are no bidders, OFCOM shall complete the award process by refunding to applicants which were not qualified, or withdrew in accordance with regulation 9, the initial deposits (where such deposits have not been forfeited under regulation 64) but not any interest which has accrued on the deposits.

(3) Where there is only one bidder, OFCOM shall grant a licence in accordance with the procedure set out in Part 4 of these Regulations.

(4) Where the number of bidders is more than one, OFCOM shall grant a licence or licences (as the case may be) in accordance with the procedure set out in Part 5 of these Regulations.

(5) OFCOM shall publish the names of the bidders on OFCOM's internet website together with a statement of whether OFCOM will proceed to grant licences in accordance with Part 4 or Part 5 (as the case may be) of these Regulations.

PART 4

PROCEDURE WHERE THERE IS ONLY ONE BIDDER

Paired frequency range selection menu

- 11.**—(1) Where there is only one bidder, OFCOM shall notify that bidder of—
- (a) a deadline by when the bidder must deliver to OFCOM at Riverside House, 2a Southwark Bridge Road, London SE1 9HA a paired frequency range selection menu in the form set out in Schedule 5 completed in accordance with paragraph (2) and signed on its behalf by two authorised persons; and
 - (b) a further deadline by when the bidder must pay into OFCOM's bank account by a same day electronic transfer, with accompanying information which identifies the bidder, a sum determined in accordance with paragraph (4).
- (2) The bidder must ensure that its selection of paired frequency ranges satisfies the following conditions—
- (a) the selection includes at least one paired frequency range;
 - (b) the selection includes no more than one paired frequency range in each band;
 - (c) the total amount of the prices indicated on the paired frequency range selection menu for the paired frequency ranges included in the selection is not greater than four hundred and twenty thousand pounds.
- (3) The licence fee shall be the total amount of the prices indicated on the paired frequency range selection menu for the paired frequency ranges selected by the bidder.
- (4) The sum which the bidder must pay to OFCOM shall be—
- (a) where the initial deposit has not been forfeited in accordance with regulation 64, a sum equal to the licence fee less the initial deposit;
 - (b) where the initial deposit has been so forfeited, a sum equal to the licence fee.
- (5) Where, due to the manner of completion, the completed paired frequency range selection menu is incomplete or defective but OFCOM believe that they can ascertain the bidder's intention in relation to the making of the selection, OFCOM shall ask the bidder to confirm in a notice to OFCOM by a specified deadline that OFCOM have correctly ascertained the bidder's intention in relation to the selection.
- (6) Where the bidder confirms in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder that OFCOM have correctly ascertained the bidder's intention, the menu in its entirety shall be accepted by OFCOM on that basis.
- (7) Where the bidder does not give such confirmation in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder—
- (a) where the incompleteness or defect relates to one or more of the selections of paired frequency ranges made on the paired frequency range selection menu, that selection or those selections (as the case may be) shall be rejected by OFCOM and accordingly the bidder shall not be entitled to the grant of a licence for those selected paired frequency ranges;
 - (b) where sub-paragraph (a) does not apply, the paired frequency range selection menu in its entirety shall be rejected by OFCOM and accordingly the bidder shall not be entitled to the grant of a licence and shall not receive a refund of its initial deposit, which shall (where it has not already been forfeited under regulation 64) be forfeited.
- (8) Where all of the selections of paired frequency ranges made on the paired frequency ranges selection menu are rejected by OFCOM in accordance with paragraph (7)(a), the bidder shall not receive a refund of its initial deposit, which shall (where it has not already been forfeited under regulation 64) be forfeited.
- (9) Where the bidder does not—

- (a) deliver a completed paired frequency range selection menu to OFCOM in accordance with paragraph (1)(a), or
- (b) pay OFCOM the required sum in accordance with paragraph (1)(b),

the bidder shall not be entitled to the grant of a licence and shall not receive a refund of its initial deposit, which shall (where it has not already been forfeited under regulation 64) be forfeited.

Grant of licence

12. Where OFCOM have received from the bidder a completed paired frequency range selection menu in accordance with regulation 11(1)(a) and the required sum in accordance with regulation 11(1)(b), OFCOM shall grant the bidder a licence for the paired frequency ranges selected on the paired frequency range selection menu that the bidder delivered to OFCOM.

Completion of the award process

- 13.—**(1) After the grant of the licence, OFCOM shall complete the award process by—
- (a) publishing on their internet website the name of the bidder to which a licence has been granted, the details of the paired frequency ranges in respect of which the licence was granted and the licence fee paid; and
 - (b) refunding to applicants which were not qualified, or withdrew in accordance with regulation 9, the initial deposits (where such deposits have not been forfeited under regulation 64) but not any interest which has accrued on the deposits.

PART 5

PROCEDURE WHERE THERE IS MORE THAN ONE BIDDER

CHAPTER 1

Principal stage, assignment stage and grant stage

The three stages

14.—(1) Where there is more than one bidder, the process for the award of licences shall consist of the procedure set out in Chapters 2 to 5 of this Part (“principal stage”), the procedure set out in Chapters 6 and 7 of this Part (“assignment stage”) and the procedure set out in Chapter 8 of this Part (“grant stage”).

(2) During the principal stage there shall be one or more rounds for the making of primary bids (“primary bid rounds”) and a further round for the making of supplementary bids (“supplementary bids round”).

(3) A bid made during the principal stage shall be a bid for a selection of lots.

(4) The number of lots available in each band (“available total”) is the number set out in subparagraphs (a) to (g)—

- (a) ten lots in the national 10 GHz band;
- (b) two lots in the national 28 GHz band;
- (c) one lot in the first sub-national 28 GHz band;
- (d) one lot in the second sub-national 28 GHz band;
- (e) one lot in the third sub-national 28 GHz band;
- (f) six lots in the national 32 GHz band;
- (g) six lots in the national 40 GHz band.

(5) Following completion of the principal stage, the paired frequency ranges that are to be assigned to the winning bidders shall be determined in accordance with the assignment stage.

(6) Licences for the paired frequency ranges so determined shall be granted in accordance with the grant stage.

CHAPTER 2

Primary bids and supplementary bids

Primary bids

15.—(1) A bid made during a primary bid round (“primary bid”) shall be at an amount in whole pounds, being the total amount of the round prices in that primary bid round for each lot included in the selection of lots in that primary bid.

(2) The round price means the price per lot determined in accordance with regulation 19 at which lots in a particular band are offered to bidders during a primary bid round.

(3) In order to make a primary bid a bidder must, on a form provided to the bidder by OFCOM (“primary bid form”)—

- (a) specify in respect of one or more bands how many lots in each of those bands it wishes to be included in a licence; and
- (b) specify an amount in whole pounds that it is willing to pay for the licence, being the total amount of the round prices in that primary bid round for the lots specified under subparagraph (a).

(4) In respect of each band, the number of lots in a band specified by a bidder under paragraph (3)(a) must not be greater than the available total for that band.

(5) Where the selection of lots in a primary bid includes lots in the national 10 GHz band, it must include at least two such lots.

(6) A bidder must not submit more than one primary bid in any primary bid round.

(7) The selection of lots in a primary bid made by a bidder must be such that the total number of eligibility points associated with the primary bid in accordance with paragraph (8) does not exceed the bidder’s eligibility limit for that primary bid round as determined in accordance with regulation 21 or 22 (as the case may be) and notified to the bidder in accordance with regulation 27(1)(c).

(8) The number of eligibility points associated with a primary bid shall be a number equal to the total of the eligibility points associated with each lot included in the selection of lots in that primary bid in accordance with Schedule 7.

Requirement for a valid primary bid in the first primary bid round

16. Any bidder which does not submit a valid primary bid in the first primary bid round shall be excluded from the award process and shall not receive a refund of its initial deposit or any sum that the bidder has paid as a deposit under regulation 23, which shall (where not already forfeited under regulation 64) be forfeited.

Supplementary bids

17.—(1) A bid made during the supplementary bids round (“supplementary bid”) shall be at an amount in whole pounds.

(2) The amount of the supplementary bid shall be determined by the bidder, subject to the restrictions set out in regulation 26.

(3) In order to make a supplementary bid a bidder must, on a form provided to the bidder by OFCOM (“supplementary bids form”)—

- (a) specify in respect of one or more bands how many lots in each of those bands it wishes to be included in a licence; and
- (b) specify an amount in whole pounds that it is willing to pay for the licence.

(4) In respect of each band, the number of lots specified by a bidder under paragraph (3)(a) must not be greater than the available total for that band.

(5) Where the selection of lots in a supplementary bid includes lots in the national 10 GHz band, it must include at least two such lots.

(6) The selection of lots in a supplementary bid made by a bidder may be the same as or different from the selections of lots in primary bids made by the bidder.

(7) A bidder may submit any number of supplementary bids in the supplementary bids round, subject to the restriction set out in paragraph (8).

(8) A bidder may not submit more than one supplementary bid for each particular selection of lots.

(9) A bidder is not required to submit a supplementary bid.

Number of primary bid rounds

18.—(1) After each primary bid round, OFCOM shall determine in respect of each band whether the total number of lots in the band included in selections of lots in valid primary bids submitted during that round (“bid total”) is greater than the available total for the band.

(2) Where for each band the bid total is not greater than the available total—

- (a) there shall be no further primary bid rounds; and
- (b) there shall be a supplementary bids round.

(3) Where for at least one band the bid total is greater than the available total, there shall be another primary bid round unless OFCOM determine, in accordance with paragraph (4), that there shall be no further primary bid rounds.

(4) OFCOM shall only make such a determination where they are satisfied that it is unlikely that the information that would be made available to bidders by OFCOM in accordance with regulation 32 following any further primary bid rounds would affect—

- (a) the determination of the winning combination of principal stage bids in accordance with regulation 41;
- (b) the determination of the base price payable by a winning bidder in accordance with regulation 42.

(5) Where OFCOM have determined under paragraph (3) that there shall be no further primary bid rounds, there shall be a supplementary bids round.

Determination of round prices for primary bid rounds

19.—(1) In the first primary bid round, the round price for a lot in each band shall be the amount set out in Schedule 6.

(2) In subsequent primary bid rounds, the round price for a lot in each band shall be determined by OFCOM in accordance with paragraph (3) or (5) (as the case may be).

(3) Where after a primary bid round OFCOM determine under regulation 18(1) that the bid total for a band is greater than the available total for the band, the round price for a lot in that band in the next primary bid round shall be an amount that is higher than the amount that was the round price for a lot in that band in the previous primary bid round, subject to the limit in paragraph (4).

(4) Where paragraph (3) applies, the amount of the round price for a lot in that band in the next primary bid round shall not be more than twice the amount of the round price for a lot in that band in the previous primary bid round.

(5) Where after a primary bid round OFCOM determine under regulation 18(1) that the bid total for the band is not greater than the available total for the band, the round price for a lot in that band in the next primary bid round shall be the same amount as it was in the previous primary bid round.

Bidder's eligibility limit for primary bid rounds

20. Before each primary bid round OFCOM shall determine an eligibility limit for each bidder for that primary bid round in accordance with regulation 21 or 22 (as the case may be).

Determination of bidder's eligibility limit for the first primary bid round

21.—(1) After the deadline specified in regulation 23(2) and before the start of the first primary bid round, OFCOM shall determine each bidder's eligibility limit for the first primary bid round in accordance with the requirements of this regulation.

(2) OFCOM shall divide by ten thousand the total amount of pounds that the bidder has on deposit (including the initial deposit and any additional sum paid under regulation 23, but not including any sum forfeited under regulation 64).

(3) Where the number that results from the calculation in paragraph (2) is greater than forty-two, the eligibility limit shall be forty-two.

(4) Where the number that results from the calculation in paragraph (2) is not greater than forty-two, the eligibility limit shall be—

- (a) that number, or
- (b) where the number is not a whole number, that number rounded down to the nearest whole number.

Determination of bidder's eligibility limit for subsequent primary bid rounds

22.—(1) For subsequent primary bid rounds, each bidder's eligibility limit shall be determined under paragraph (2) or (5) (as the case may be).

(2) Where a bidder makes a valid primary bid in a primary bid round, OFCOM shall determine the bidder's eligibility limit for the next primary bid round by calculating the number of eligibility points associated with the valid primary bid.

(3) The number of eligibility points associated with a valid primary bid shall be a number equal to the total of the eligibility points associated with each lot included in the selection of lots in that primary bid in accordance with Schedule 7.

(4) The bidder's eligibility limit shall be a number equal to the number of eligibility points associated with that valid primary bid.

(5) Where a bidder does not make a valid primary bid in a primary bid round, the bidder's eligibility limit for the next primary bid round shall be zero.

Additional deposit before the first primary bid round

23.—(1) In addition to the initial deposit, a bidder may pay an additional sum in pounds as a deposit which shall be taken into account by OFCOM in accordance with regulation 21 for the purpose of calculating the bidder's eligibility limit for the first primary bid round.

(2) A bidder wishing to pay such an additional sum must, by a deadline specified by OFCOM, pay the additional sum into OFCOM's bank account by a same day electronic transfer with accompanying information which identifies the bidder.

Valid primary bids

24.—(1) A primary bid shall only be taken into consideration for the purposes of determining—

- (a) the bid total for a band in accordance with regulation 18(1);
- (b) the winning combination of principal stage bids in accordance with regulation 41;
- (c) the base price payable by a winning bidder in accordance with regulation 42;

if it satisfies the conditions set out in paragraph (2) ("valid primary bid").

- (2) The conditions are that—
- (a) the primary bid is made on a primary bid form that has been completed in accordance with regulation 15(3);
 - (b) the primary bid is submitted in accordance with the restriction set out in regulation 15(6);
 - (c) the primary bid complies with the restrictions set out in regulation 15(4) and (7) and with the requirement set out in regulation 15(5); and
 - (d) the completed primary bid form is submitted to OFCOM in accordance with regulation 28(1) and is received by OFCOM in accordance with regulation 28(2).

Valid supplementary bids

25.—(1) A supplementary bid shall only be taken into consideration for the purposes of determining—

- (a) the winning combination of principal stage bids under regulation 41;
- (b) the base price payable by a winning bidder under regulation 42;

if it satisfies the conditions set out in paragraph (2) (“valid supplementary bid”).

- (2) The conditions in respect of a supplementary bid are that—
- (a) the supplementary bid is made on a supplementary bids form that has been completed in accordance with regulation 17(3);
 - (b) the amount of the supplementary bid specified by the bidder under regulation 17(3)(b) complies with the restrictions set out in regulation 26;
 - (c) the supplementary bid complies with the requirement set out in regulation 17(5);
 - (d) the supplementary bid is submitted in accordance with the restrictions set out in regulation 17(4) and (8); and
 - (e) the completed supplementary bids form is submitted to OFCOM in accordance with regulation 35(1) and is received by OFCOM in accordance with regulation 35(2).

Restrictions on amount of supplementary bid

26.—(1) The restrictions that apply to the amount of a supplementary bid specified by a bidder under regulation 17(3)(b) are that—

- (a) the amount of the supplementary bid must not be less than the total amount of the round prices in the first primary bid round for the lots included in the selection of lots in that bid;
- (b) where the supplementary bid is for a selection of lots in respect of which the bidder has also made a primary round bid, the amount of the supplementary bid must be greater than the amount of the highest primary round bid made by the bidder for that selection of lots;
- (c) where—
 - (i) the bidder did not make a valid primary bid in the final primary bid round, or
 - (ii) the total number of eligibility points associated with the supplementary bid in accordance with paragraph (4) is greater than the total number of eligibility points associated with the valid primary bid made by the bidder in the final primary bid round in accordance with paragraph (4),

the amount of the supplementary bid must not be greater than the amount determined in accordance with paragraph (2).

(2) That amount shall be the total amount of the round prices in the primary bid round referred to in paragraph (3) for the lots included in the selection of lots in the supplementary bid.

(3) That primary bid round is the latest primary bid round in which a primary bid made by the bidder for that selection of lots could have satisfied the restriction set out in regulation 15(7).

(4) The number of eligibility points associated with a primary bid or a supplementary bid shall be a number equal to the total of the eligibility points associated with each lot included in the selection of lots in that bid in accordance with Schedule 7.

CHAPTER 3

Procedure for primary bid rounds

Notice to be given to bidders before primary bid rounds and extensions to rounds

27.—(1) Before the start of each primary bid round, OFCOM shall notify each bidder of—

- (a) the date on which, and the times on that date within which, the primary bid round will take place;
- (b) in respect of each band, the round price for the band in that primary bid round (determined in accordance with regulation 19);
- (c) the bidder's eligibility limit for that primary bid round (determined in accordance with regulation 21 or 22, as the case may be).

(2) The time notified by OFCOM under paragraph (1)(a) as the end of the primary bid round ("end of round time") may be treated by a bidder in respect of—

- (a) no more than two primary bid rounds, and
- (b) for each primary bid round in respect of which paragraph (3) applies to the bidder, a further primary bid round,

as that time extended by thirty minutes, and OFCOM shall treat that extended time as the end of round time for the purposes of paragraph (1)(a).

(3) This paragraph applies to a bidder where—

- (a) in respect of a previous primary bid round, the bidder treated the end of round time for that round as extended by thirty minutes in accordance with paragraph (2);
- (b) the bidder submitted its completed primary bid form for that primary bid round so that it was received by OFCOM by the end of round time so extended; and
- (c) OFCOM have notified the bidder that they are satisfied that, in respect of that primary bid round, circumstances existed which were beyond the bidder's control which had the effect that the bidder could not have submitted its primary bid form so that it was received by OFCOM by the end of round time without such an extension.

Submission of primary bid form to OFCOM

28.—(1) Except as provided for in regulation 29, a bidder must submit the completed primary bid form to OFCOM by using the electronic auction system.

(2) The completed primary bid form must be received by OFCOM by the end of round time.

Alternative method for submission of primary bid form

29.—(1) Where OFCOM are satisfied that a bidder is unable to submit a primary bid form by using the electronic auction system because of technical failure (or an event or circumstance with similar effect on the bidder's ability to use the electronic auction system), OFCOM shall notify the bidder of an alternative method of submitting the primary bid form and any requirements relating to the authentication of communications made by means of the alternative method.

(2) The bidder must submit the primary bid form by means of the alternative method and must comply with any requirements which have been notified to it under paragraph (1) relating to the authentication of communications.

Incomplete or defective primary bid form

30.—(1) Where, due to the manner of completion, a primary bid form is incomplete or defective but OFCOM believe that they can ascertain the bidder's intention in relation to the making of the primary bid, OFCOM shall ask the bidder to confirm in a notice to OFCOM by a specified deadline that OFCOM have correctly ascertained the bidder's intention in relation to the making of the primary bid.

(2) Where the bidder confirms in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder that OFCOM have correctly ascertained the bidder's intention, the primary bid form in its entirety shall be accepted by OFCOM on that basis.

(3) Where the bidder does not give such confirmation in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder, the primary bid form in its entirety shall be rejected by OFCOM and the primary bid submitted on the primary bid form shall not be a valid primary bid and accordingly shall not be taken into consideration for the purposes of determining—

- (a) the bid total for a band in accordance with regulation 18(1);
- (b) the winning combination of principal stage bids in accordance with regulation 41;
- (c) the base price payable by a winning bidder in accordance with regulation 42.

Notification that primary bid not valid

31. Where a bidder submits a primary bid that is not a valid primary bid during a primary bid round OFCOM shall, after the end of that primary bid round, notify the bidder of that fact and shall give the reasons why the bid is not a valid primary bid.

Release of information on primary bids

32. After the end of a primary bid round and before the start of the subsequent primary bid round (or before the start of the supplementary bids round if there is no subsequent primary bid round), OFCOM shall notify bidders of the bid total for each band for the primary bid round that has ended.

Further deposit for primary bid rounds

33.—(1) Where in respect of a primary bid the amount specified by a bidder under regulation 15(3)(b) is greater than the total amount that the bidder has on deposit (including the initial deposit, any sum paid as a deposit under regulation 23 and any sum or sums paid as a deposit under this regulation, but not including any sum forfeited under regulation 64) OFCOM may, having regard to the desirability of securing an efficient outcome of the principal stage, subsequently notify the bidder that the bidder is required to pay a further sum in pounds as a deposit.

(2) The further sum shall be an amount such that the total amount that the bidder has on deposit (including the initial deposit, any sum paid as a deposit under regulation 23 and any sum or sums paid as a deposit under this regulation, but not including any sum forfeited under regulation 64) is not less than the amount of the highest valid primary bid that the bidder made before OFCOM gave notice to the bidder under paragraph (1).

(3) Any such sum shall be paid into OFCOM's bank account by a same day electronic transfer, with accompanying information which identifies the bidder, by a deadline specified by OFCOM.

(4) Where a bidder does not satisfy the requirements set out in paragraph (3), OFCOM shall notify the bidder of that fact, and for any primary bid rounds following notice being given under this paragraph the bidder's eligibility limit shall be zero.

CHAPTER 4

Procedure for supplementary bids round and final principal stage deposit

Notice to be given to bidders before supplementary bids round

- 34.** Before the start of the supplementary bids round, OFCOM shall notify each bidder of —
- (a) the date on which, and the times on that date within which, the supplementary bids round will take place;
 - (b) the deadline by when bidders must pay a further sum in pounds as a deposit in accordance with regulation 40.

Submission of supplementary bids form to OFCOM

35.—(1) Except as provided for in regulation 36, a bidder must submit the completed supplementary bids form to OFCOM by using the electronic auction system.

(2) Except as provided for in regulation 37, the completed supplementary bids form must be received by OFCOM by the time notified to bidders under regulation 34(a) as the end of the supplementary bids round.

Alternative method for submission of supplementary bids form

36.—(1) Where OFCOM are satisfied that a bidder is unable to submit a supplementary bids form by using the electronic auction system because of technical failure (or an event or circumstance with similar effect on the bidder's ability to use the electronic auction system), OFCOM shall notify the bidder of an alternative method of submitting the supplementary bids form and any requirements relating to the authentication of communications made by means of the alternative method.

(2) The bidder must submit the supplementary bids form by means of the alternative method and must comply with any requirements which have been notified to it under paragraph (1) relating to the authentication of communications.

Extension to supplementary bids round

37.—(1) Where—

- (a) OFCOM have not received a completed supplementary bids form from a bidder by the time notified to bidders under regulation 34(a) as the end of the supplementary bids round, and
- (b) paragraph (2) applies,

the time by which the bidder's completed supplementary bids form must be received by OFCOM shall be the time sixty minutes after the time notified to bidders under regulation 34(a) as the end of the supplementary bids round.

(2) This paragraph applies where OFCOM are satisfied that circumstances existed which were beyond the bidder's control which had the effect that the bidder could not submit its supplementary bids form so that it was received by OFCOM by the time notified to bidders under regulation 34(a) as the end of the supplementary bids round.

Incomplete or defective supplementary bids form

38.—(1) Where, due to the manner of completion, a supplementary bids form is incomplete or defective but OFCOM believe that they can ascertain the bidder's intention in relation to the making of the supplementary bid or bids, OFCOM shall ask the bidder to confirm in a notice to OFCOM by a specified deadline that OFCOM have correctly ascertained the bidder's intention in relation to the making of the supplementary bid or bids.

(2) Where the bidder confirms in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder that OFCOM have correctly ascertained the bidder's intention, the supplementary bids form in its entirety shall be accepted by OFCOM on that basis.

(3) Where the bidder does not give such confirmation in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder—

- (a) where the incompleteness or defect relates to one or more of the supplementary bids made on the supplementary bids form, that supplementary bid or those supplementary bids (as the case may be) shall be rejected by OFCOM and shall not be taken into consideration for the purposes of determining—
 - (i) the winning combination of principal stage bids in accordance with regulation 41;
 - (ii) the base price payable by a winning bidder in accordance with regulation 42;
- (b) where sub-paragraph (a) does not apply, the supplementary bids form in its entirety shall be rejected by OFCOM and none of the supplementary bids made on that supplementary bids form shall be taken into consideration for the purposes of determining—
 - (i) the winning combination of principal stage bids in accordance with regulation 41;
 - (ii) the base price payable by a winning bidder in accordance with regulation 42.

Notification that supplementary bid not valid

39. Where a bidder submits a supplementary bid that is not a valid supplementary bid OFCOM shall, after the end of the supplementary bids round, notify the bidder of that fact and shall give the reasons why the bid is not a valid supplementary bid.

Final principal stage deposit

40.—(1) By the deadline notified to bidders under regulation 34(b), each bidder must pay into OFCOM's bank account by a same day electronic transfer, with accompanying information which identifies the bidder, a further sum in pounds as a deposit so that the total amount the bidder has on deposit (including the initial deposit, any sum paid as a deposit under regulation 23 or 33 and any sum paid as a deposit under this paragraph, but not including any sum forfeited under regulation 64) is not less than whichever is the greater of—

- (a) the amount of the bidder's highest valid primary bid as specified by the bidder under regulation 15(3)(b);
- (b) the amount of the bidder's highest valid supplementary bid as specified by the bidder under regulation 17(3)(b).

(2) Where a bidder does not satisfy the requirements set out in paragraph (1), OFCOM shall notify the bidder and the bidder shall be excluded from the award process and shall not receive a refund of its initial deposit or any sum paid as a deposit under regulation 23 or 33 or under paragraph (1), which shall (where not already forfeited under regulation 64) be forfeited, and all of that bidder's primary bids and supplementary bids (if any) shall be deemed to be invalid and shall not be taken into consideration for the purposes of determining—

- (a) the winning combination of principal stage bids in accordance with regulation 41;
- (b) the base price payable by a winning bidder in accordance with regulation 42.

CHAPTER 5

Determination of winning principal stage bids and conclusion of principal stage

Determination of the winning principal stage bids and the winning combination of principal stage bids

41.—(1) The winning principal stage bids shall be those valid principal stage bids that comprise the winning combination of principal stage bids.

(2) Unless paragraph (4) applies, the winning combination of principal stage bids shall be the valid combination of principal stage bids having the highest total value of amounts bid.

(3) A valid combination of principal stage bids is any combination of valid principal stage bids within which—

- (a) there is at most one valid principal stage bid from any one bidder; and
- (b) in respect of each band, the bid total for that band for the bids included in the combination is not greater than the available total for that band.

(4) Where there is more than one valid combination of principal stage bids for which the total value is equal highest, the winning combination of principal stage bids shall be determined in accordance with the order of precedence set out in paragraph (5) or, where paragraph (6) applies, in accordance with that paragraph.

(5) The order of precedence shall be determined by the number of eligibility points associated with each such valid combination of principal stage bids in accordance with paragraph (7) such that valid combinations of principal stage bids with which a greater number of eligibility points are associated prevail over valid combinations of principal stage bids with which a lesser number of eligibility points are associated.

(6) Where there is more than one valid combination of principal stage bids for which—

- (a) the total value is equal highest, and
- (b) the associated number of eligibility points is equal highest,

OFCOM shall employ a method of random selection from amongst those valid combinations of principal stage bids to determine the winning combination of principal stage bids.

(7) The number of eligibility points associated with a valid combination of principal stage bids shall be a number equal to the total of the eligibility points associated with each lot included in the selections of lots in the bids constituting that valid combination of principal stage bids in accordance with Schedule 7.

Determination of base prices for winning principal stage bids

42. In respect of each winning principal stage bid, OFCOM shall determine an amount in accordance with Schedule 8 (“base price”) which shall be payable by the relevant winning bidder.(a)

Notification of results of principal stage and refund of deposits

43. Following the determination of the winning principal stage bids and the winning combination of principal stage bids under regulation 41 and the determination of the base price for each winning principal stage bid under regulation 42, OFCOM shall—

- (a) notify each winning bidder of—
 - (i) the selection of lots in its winning principal stage bid;
 - (ii) the base price for that winning principal stage bid;
- (b) notify each bidder of—
 - (i) the names of the winning bidders;
 - (ii) in respect of each winning bidder, the selection of lots in its winning principal stage bid; and
- (c) refund to applicants which were not qualified or which withdrew in accordance with regulation 9 and to bidders which were not winning bidders the initial deposits and any sum paid as a deposit under regulation 23, 33 or 40 (where such deposits have not been

(a) OFCOM have provided notes on the determination of the licence fees payable by bidders in a document called ‘Notes on determination of licence fees payable by bidders in relation to the award of the 10, 28, 32 and 40 GHz spectrum bands: Schedules 8 and 9 to the Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007’ published on 30 November 2007.

forfeited under regulation 16, 40 or 64), but not any interest which has accrued on the deposits.

CHAPTER 6

Assignment of paired frequency range to a winning bidder for a band where only one winning principal stage bid includes lots in the band

Procedure where there is only one winning principal stage bid for lots in a band and that bid includes all lots in the band

44.—(1) This regulation applies to any band where lots in that band were specified in only one winning principal stage bid and all of the available lots in that band were so specified.

(2) In respect of each such band, the paired frequency range to be assigned to the bidder that submitted the winning principal stage bid that specified all of the lots in that band shall be the paired frequency range comprising all of the frequencies in that band.

Procedure where there is only one winning principal stage bid for lots in a band and that bid does not include all lots in the band

45.—(1) This regulation applies to any band where lots in that band were specified in only one winning principal stage bid and not all of the available lots in the band were so specified.

(2) In respect of each such band, OFCOM shall notify the bidder that submitted the winning principal stage bid of—

- (a) the paired frequency ranges in the band that the relevant bidder may select, being the paired frequency ranges which satisfy the following conditions—
 - (i) the bandwidth of the paired frequency range is the same as the total bandwidth of the lots in that band specified in the bidder's winning principal stage bid;
 - (ii) the frequencies in that band that are not included in the paired frequency range form one paired frequency range; and
- (b) a deadline by when its selection must be received by OFCOM.

(3) To select a paired frequency range the bidder must, on a form provided to the bidder by OFCOM ("paired frequency range selection form"), select no more than one of the paired frequency ranges notified to the bidder by OFCOM under paragraph (2)(a).

(4) Except as provided for in paragraph (5), the bidder must submit the completed paired frequency range selection form to OFCOM by using the electronic auction system, and the form must be received by OFCOM by the deadline notified to the bidder under paragraph (2)(b).

(5) Where OFCOM are satisfied that a bidder is unable to submit a paired frequency range selection form by using the electronic auction system because of technical failure (or an event or circumstance with similar effect on the bidder's ability to use the electronic auction system), OFCOM shall notify the bidder of an alternative method of submitting the paired frequency range selection form and any requirements relating to the authentication of communications made by means of the alternative method.

(6) Where OFCOM have notified the bidder under paragraph (5), the bidder must submit the paired frequency range selection form by means of the alternative method and must comply with any requirements which have been notified to it under that paragraph relating to the authentication of communications.

(7) Where, due to the manner of completion, a paired frequency range selection form is incomplete or defective but OFCOM believe that they can ascertain the bidder's intention in relation to the making of the selection, OFCOM shall ask the bidder to confirm in a notice to OFCOM by a specified deadline that OFCOM have correctly ascertained the bidder's intention in relation to the making of the selection.

(8) Where the bidder confirms in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder that OFCOM have correctly ascertained the

bidder's intention, the paired frequency range selection form in its entirety shall be accepted by OFCOM on that basis.

(9) Where the bidder does not give such confirmation in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder, the paired frequency range selection form in its entirety shall be rejected by OFCOM and OFCOM shall determine which of the paired frequency ranges notified to the bidder under paragraph (2)(a) shall be assigned to the bidder.

(10) Where OFCOM have received from the bidder in accordance with paragraph (4) a paired frequency range selection form completed in accordance with paragraph (3), the paired frequency range to be assigned to the bidder shall be the paired frequency range selected on the paired frequency range selection form that the bidder submitted to OFCOM.

(11) Where paragraph (10) does not apply, OFCOM shall determine which of the paired frequency ranges notified to the bidder under paragraph (2)(a) shall be assigned to the bidder.

CHAPTER 7

Assignment of paired frequency ranges to winning bidders for a band where more than one winning principal stage bid includes lots in the band

Assignment stage round and assignment stage bids

46.—(1) The procedure set out in this chapter applies to any band where lots in that band were specified in more than one winning principal stage bid.

(2) In respect of those bands, there shall be one further round (“assignment stage round”) to determine which paired frequency ranges in those bands shall be assigned to winning bidders.

(3) Only bidders that submitted a winning principal stage bid where the lots specified in that bid included a lot or lots in one or more of the bands to which the assignment stage round relates may take part in the assignment stage round.

(4) A bid made during the assignment stage round (“assignment stage bid”) shall be a bid for a paired frequency range at an amount in whole pounds specified by the bidder.

(5) A bidder taking part in the assignment stage round may only bid for the paired frequency ranges that OFCOM determine are available to that bidder in accordance with regulation 47.

(6) A bidder may submit no more than one assignment stage bid for each paired frequency range so determined.

(7) A bidder is not required to submit an assignment stage bid.

(8) In order to make an assignment stage bid for a paired frequency range in a band, a bidder must, on a form provided to the bidder by OFCOM (“assignment stage bid form”), specify an amount in whole pounds that it is willing to pay for a licence that includes that paired frequency range, in addition to the base price for that bidder's winning principal stage bid determined under regulation 42.

Determination of paired frequency ranges

47. For each band to which the assignment stage round relates, the paired frequency ranges in the band that are available to a bidder in the assignment stage round shall be the paired frequency ranges that satisfy the following conditions—

- (a) the bandwidth of the paired frequency range is equal to the total bandwidth of the lots in the band that were specified in the bidder's winning principal stage bid; and
- (b) the frequency limits of the two blocks of frequencies comprised in the paired frequency range are such that the following conditions could be satisfied—
 - (i) each winning bidder that specified lots in that band in its winning principal stage bid is assigned a paired frequency range that, in respect to that bidder's winning principal stage bid, satisfies the condition set out in paragraph (a);
 - (ii) there is no overlap between the paired frequency ranges so assigned; and

- (iii) any frequencies in the band that are not so assigned form one paired frequency range.

Assignment stage bid deposit

48.—(1) Each bidder that makes an assignment stage bid must, by a deadline specified by OFCOM, pay into OFCOM’s bank account by a same day electronic transfer, with accompanying information which identifies the bidder, a further sum in pounds as a deposit so that the total amount the bidder has on deposit (including the initial deposit, any sum paid as a deposit under regulation 23, 33 or 40 and any sum paid as a deposit under this paragraph, but not including any sum forfeited under regulation 64) is an amount that is not less than the amount, *d*, calculated in accordance with the formula set out in paragraph (2).

(2) The formula is—

$$d = b + \sum a$$

where—

“*b*” is the amount of the base price of the bidder’s winning principal stage bid (determined in accordance with regulation 42);

“*a*” is, in respect of each band to which the assignment stage round relates, the amount of the highest assignment stage bid made by the bidder for a paired frequency range in that band.

(3) Where a bidder does not satisfy the provisions set out in paragraph (1)—

- (a) all of the assignment stage bids submitted by the bidder in the assignment stage round shall be deemed to be invalid and shall not be taken into consideration for the purposes of determining—
 - (i) the winning combination of assignment stage bids under regulation 57;
 - (ii) the additional price payable by a winning bidder under regulation 58;
- (b) the bidder will be deemed to have made a valid assignment stage bid of zero for each paired frequency range available to the bidder in accordance with regulation 47 for the purposes mentioned in sub-paragraph (a).

Valid assignment stage bids

49.—(1) An assignment stage bid shall only be taken into consideration for the purposes of determining—

- (a) the winning combination of assignment stage bids under regulation 57;
- (b) the additional price payable by a winning bidder under regulation 58;

if it satisfies the conditions set out in paragraph (2) (“valid assignment stage bid”).

(2) The conditions are—

- (a) the assignment stage bid is submitted in accordance with the restrictions set out in regulation 46(5) and (6);
- (b) the assignment stage bid is made on an assignment stage bid form that has been completed in accordance with regulation 46(8);
- (c) the completed assignment stage bid form is submitted to OFCOM in accordance with regulation 51(1) and is received by OFCOM in accordance with regulation 51(2).

Notice to bidders before the assignment stage round

50. Before the start of the assignment stage round, OFCOM shall notify each bidder that may take part in the assignment stage bid round in accordance with regulation 46(3) of—

- (a) the paired frequency ranges that are available to that bidder as determined in accordance with regulation 47;

- (b) the date on which, and the times on that date within which, the assignment stage round will take place.

Submission of assignment stage bid form to OFCOM

51.—(1) Except as provided for in regulation 52, a bidder must submit the completed assignment stage bid form to OFCOM by using the electronic auction system.

(2) Except as provided for in regulation 53, the completed assignment stage bid form must be received by OFCOM by the time notified to the bidder under regulation 50(b) as the end of the assignment stage round.

Alternative method for submission of assignment stage bid form

52.—(1) Where OFCOM are satisfied that a bidder is unable to submit an assignment stage bid form by using the electronic auction system because of technical failure (or an event or circumstance with similar effect on the bidder's ability to use the electronic auction system), OFCOM shall notify the bidder of an alternative method of submitting the assignment stage bid form and any requirements relating to the authentication of communications made by means of the alternative method.

(2) The bidder must submit the assignment stage bid form by means of the alternative method and must comply with any requirements which have been notified to it under paragraph (1) relating to the authentication of communications.

Extension to assignment stage round

53.—(1) Where—

- (a) OFCOM have not received a completed assignment stage bid form from a bidder by the time notified to bidders under regulation 50(b) as the end of the assignment stage round, and
- (b) paragraph (2) applies,

the time by which the bidder's completed assignment stage bid form must be received by OFCOM shall be the time thirty minutes after the time notified to bidders under regulation 50(b) as the end of the assignment stage round.

(2) This paragraph applies where OFCOM are satisfied that circumstances existed which were beyond the bidder's control which had the effect that the bidder could not submit its assignment stage bid form so that it was received by OFCOM by the time notified to bidders under regulation 50(b) as the end of the assignment stage round.

Incomplete or defective assignment stage bid form

54.—(1) Where, due to the manner of completion, an assignment stage bid form is incomplete or defective but OFCOM believe that they can ascertain the bidder's intention in relation to the making of assignment stage bids, OFCOM shall ask the bidder to confirm in a notice to OFCOM by a specified deadline that OFCOM have correctly ascertained the bidder's intention in relation to the making of assignment stage bids.

(2) Where the bidder confirms in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder that OFCOM have correctly ascertained the bidder's intention, the assignment stage bid form in its entirety shall be accepted by OFCOM on that basis.

(3) Where the bidder does not give such confirmation in a notice given to OFCOM by the specified deadline which is signed by two authorised persons of that bidder—

- (a) where the incompleteness or defect relates to one or more of the assignment stage bids made on the assignment stage bid form, that assignment stage bid or those assignment stage bids (as the case may be) shall be invalid, and regulation 56 shall apply accordingly;

- (b) in all other cases, the assignment stage bid form in its entirety shall be rejected by OFCOM and all of the assignment stage bids made on that assignment stage bids form shall be invalid, and regulation 56 shall apply accordingly.

Notification that assignment stage bid is not valid

55. Where a bidder submits an assignment stage bid that is not a valid assignment stage bid OFCOM shall, after the end of the assignment stage round, notify the bidder of that fact and shall give the reasons why the bid is not a valid assignment stage bid.

Procedure where there is no valid assignment stage bid

56. In respect of each paired frequency range available to a bidder in accordance with regulation 47, where the bidder does not make a valid assignment stage bid for a paired frequency range, the bidder shall be deemed to have made a valid assignment stage bid of zero for the paired frequency range for the purposes of determining—

- (a) the winning combination of assignment stage bids under regulation 57;
- (b) the additional price payable by a winning bidder under regulation 58.

Determination of the winning assignment stage bids and the winning combination of assignment stage bids

57.—(1) For each band to which the assignment stage round relates, OFCOM shall determine separately the winning assignment stage bids for paired frequency ranges in that band.

(2) For each such band, the winning assignment stage bids for paired frequency ranges in the band shall be those valid assignment stage bids for paired frequency ranges in that band that comprise the winning combination of assignment stage bids.

(3) Unless paragraph (5) applies, the winning combination of assignment stage bids shall be the valid combination of assignment stage bids having the highest total value of amounts bid.

(4) A valid combination of assignment stage bids is any combination of valid assignment stage bids for paired frequency ranges in that band within which—

- (a) there is one valid assignment stage bid from each winning bidder that specified lots in that band in its winning principal stage bid;
- (b) there is no overlap between the paired frequency ranges comprised in those valid assignment stage bids; and
- (c) any frequencies in that band which are not included in those valid assignment stage bids form one paired frequency range.

(5) Where there is more than one valid combination of assignment stage bids for which the total value is equal highest, OFCOM shall employ a method of random selection from amongst those valid combinations of assignment stage bids to determine the winning combination of assignment stage bids.

Determination of additional prices for winning assignment stage bids

58. In respect of each winning assignment stage bid, OFCOM shall determine an amount in whole pounds in accordance with Schedule 9 (“additional price”) which shall be payable by the relevant winning bidder.

Notification of results of assignment stage

59. Following determination of the winning assignment stage bids and the winning combination of assignment stage bids under regulation 57, and the determination of the additional price for each winning assignment stage bid under regulation 58, OFCOM shall notify each winning bidder of—

- (a) the paired frequency ranges in respect of which the bidder made winning assignment stage bids;
- (b) the additional price for each winning assignment stage bid made by the bidder.

CHAPTER 8

Grant stage

Determination of the licence fee

60. The licence fee payable by a winning bidder shall be an amount equal to the total of—

- (a) the base price for the bidder's winning principal stage bid determined by OFCOM under regulation 42; and
- (b) the additional price for each winning assignment stage bid made by the bidder determined by OFCOM under regulation 58.

Procedure where amount of winning bidder's deposit is less than the licence fee

61.—(1) Where, after completion of the assignment stage, the amount of a winning bidder's deposit (including the initial deposit and any sum paid as a deposit under regulation 23, 33, 40 or 48, but not including any sum forfeited under regulation 64) is an amount that is less than the amount of the winning bidder's licence fee calculated in accordance with regulation 60—

- (a) OFCOM shall notify the bidder of a deadline by when the bidder must comply with subparagraph (b);
- (b) the bidder must by that deadline pay into OFCOM's bank account by a same day electronic transfer, with accompanying information which identifies the bidder, a sum in pounds calculated in accordance with paragraph (2).

(2) The sum which the bidder must pay to OFCOM shall be the difference between the amount of the winning bidder's licence fee calculated in accordance with regulation 60 and the amount of the bidder's deposit (including the initial deposit and any sum paid as a deposit under regulation 23, 33, 40 or 48, but not including any sum forfeited under regulation 64).

(3) Where a bidder has satisfied the requirement set out in paragraph (1)(b), OFCOM shall grant the bidder a licence for—

- (a) the paired frequency range or ranges (as the case may be) that are to be assigned to the bidder in accordance with Chapter 6 of this Part; and
- (b) the paired frequency range or ranges (as the case may be) for which the bidder submitted a winning assignment stage bid or winning assignment stage bids under Chapter 7 of this Part.

(4) Where a bidder does not satisfy the requirement set out in paragraph (1)(b), the bidder shall not be entitled to the grant of a licence under these Regulations and shall not receive a refund of its initial deposit or any sum paid as a deposit under regulation 23, 33, 40 or 48, which shall (where not already forfeited under regulation 64) be forfeited.

Procedure where amount of winning bidder's deposit is greater than or equal to the licence fee

62.—(1) Where, after completion of the assignment stage, the amount of a winning bidder's deposit (including the initial deposit and any sum paid as a deposit under regulation 23, 33, 40 or 48, but not including any sum forfeited under regulation 64) is greater than or equal to the amount of the winning bidder's licence fee calculated in accordance with regulation 60, OFCOM shall—

- (a) grant the winning bidder a licence for—
 - (i) the paired frequency range or ranges (as the case may be) that are to be assigned to the bidder in accordance with Chapter 6 of this Part;

- (ii) the paired frequency range or ranges (as the case may be) in respect of which the bidder submitted a winning assignment stage bid or winning assignment stage bids under Chapter 7 of this Part;
- (b) refund to the winning bidder a sum in pounds calculated in accordance with paragraph (2).

(2) The sum which OFCOM shall refund to a winning bidder shall be the difference (if any) between the amount of the winning bidder's deposit (including the initial deposit and any sum paid as a deposit under regulation 23, 33, 40 or 48, but not including any sum forfeited under regulation 64) and the amount of the winning bidder's licence fee calculated in accordance with regulation 60, but not any interest which has accrued on the deposit.

Completion of the award process

63. After the grant of licences and the payment of refunds to winning bidders in accordance with regulation 62(1)(b), OFCOM shall complete the award process by publishing on their internet website details of all valid principal stage bids and all valid assignment stage bids made by each bidder, the names of the persons to whom licences were granted, the details of the paired frequency ranges in respect of which those licences were granted and the details of the licence fees paid.

PART 6

ACTIVITY RULES

Forfeit of deposit and exclusion from award process

64. If, in relation to an applicant which is qualified to bid or a bidder, OFCOM are satisfied that any of the events set out in regulation 66 are occurring (or have occurred) and that the occurrence would materially affect the outcome of the award process—

- (a) the initial deposit and any sum or sums paid as a deposit under regulation 23, 33, 40 or 48 shall be forfeited by, and not refunded to, the applicant or bidder concerned; and
- (b) that applicant or bidder may also be excluded by OFCOM from the award process by OFCOM giving that applicant or bidder notice in writing.

Bids made by an excluded bidder

65.—(1) Where a bidder is excluded from the award process under regulation 64(b) during the principal stage, all of the principal stage bids submitted by the bidder shall be deemed to be invalid and shall not be taken into consideration for the purposes of determining—

- (a) the winning combination of principal stage bids under regulation 41;
- (b) the base price payable by a winning bidder under regulation 42.

(2) Where a bidder is excluded from the award process under regulation 64(b) during the assignment stage, all of the assignment stage bids submitted by the bidder (including any bids which the bidder is deemed to have submitted under regulation 56) shall be deemed to be invalid and shall not be taken into consideration for the purposes of determining—

- (a) the winning combination of assignment stage bids under regulation 57;
- (b) the additional price payable by a winning bidder under regulation 58.

Events

66. The events referred to in regulation 64, in relation to an applicant or bidder, are—

- (a) the submission to OFCOM of any information in connection with the award process which is false or misleading;

- (b) any member of that applicant's or bidder's bidder group colluding or attempting to collude with another person to distort the outcome of the award process;
- (c) any member of that applicant's or bidder's bidder group acting in a way which is likely to distort the outcome of the award process;
- (d) any member of that applicant's or bidder's bidder group, or any person to whom confidential information has been disclosed, disclosing, or attempting to disclose, or inciting another person to disclose, any confidential information, whether directly or indirectly, to any person, except where the disclosure is—
 - (i) to OFCOM;
 - (ii) to a member of that applicant's or bidder's bidder group;
 - (iii) to a provider of finance for the purpose of raising finance for a bid; or
 - (iv) to a person for the purpose of enabling that person to decide whether to participate as a member of the applicant's or bidder's bidder group;
- (e) any member of that applicant's or bidder's bidder group obtaining or attempting to obtain confidential information relating to another applicant or bidder;
- (f) any member of that applicant's or bidder's bidder group receiving or attempting to receive services in relation to the award process from any person who has provided or is providing services to OFCOM in relation to the award process;
- (g) any person who is a member or a director or employee of a member of that applicant's or bidder's bidder group and also a director or employee of a member of another bidder group—
 - (i) taking part in the preparation of both bidder groups for participation in the award process; or
 - (ii) receiving confidential information relating to both bidder groups;
- (h) a member of that applicant's or bidder's bidder group is or becomes a member of another applicant's or bidder's bidder group;
- (i) a change occurring in the membership of that applicant's or bidder's bidder group from that notified to OFCOM in its application except as a result of —
 - (i) a person ceasing to be a member of that bidder group;
 - (ii) a person joining that bidder group under the procedure in regulation 6(3);
 - (iii) a person becoming an associate through merger or acquisition activity provided that such activity is not for a purpose related to the award process.

PART 7

MISCELLANEOUS

General power of exclusion

67. OFCOM may, at any time, notify any applicant or bidder of its exclusion from the award process if, in their opinion, the grant of a licence to that applicant or bidder would be prejudicial to the interests of national security or the applicant or bidder is not a fit and proper person to hold a licence.

Notification to OFCOM

68. If, in accordance with any provision of these Regulations, an applicant or bidder is required, or wishes, to notify OFCOM of any fact or circumstance, it must do so by notice in writing which is marked for the attention of the OFCOM personnel who are specified by OFCOM for that purpose on OFCOM's internet website and must deliver that notice to OFCOM—

- (a) by electronic mail to an electronic mail address dedicated to the award process which is published by OFCOM on their internet website;
- (b) by personal delivery to Riverside House, 2a Southwark Bridge Road, London, SE1A 9HA; or
- (c) by fax to a number dedicated to the award process which is published by OFCOM on their internet website.

Changes to timing or location

69.—(1) Subject to regulations 70 and 71, paragraph (2) applies where OFCOM determine that it is impracticable for any reason—

- (a) for any document which is to be delivered to OFCOM under these Regulations to be delivered at the place specified or by the deadline specified under these Regulations; or
- (b) for any action which is required to be undertaken in accordance with these Regulations to be completed by the deadline specified.

(2) Where this paragraph applies, OFCOM shall take all reasonable steps to notify the applicants or bidders (as the case may be) that—

- (a) delivery must be made on a different day or within different times on that day or at a different place;
- (b) the action must be completed on a different day or by a different deadline.

Changes to round times and use of electronic auction system

70.—(1) Where a time for the start of a round has been notified to bidders and OFCOM determine that it is impracticable for any reason to start the round at that time, OFCOM shall take all reasonable steps to notify bidders of a revised time for the start of the round.

(2) Where a time for the end of a round has been notified to bidders and OFCOM determine that it is impracticable for any reason for the round to end at that time, OFCOM shall take all reasonable steps to notify bidders of a revised time for the end of the round.

(3) Where OFCOM determine that it is impracticable for any reason to use the electronic auction system for any of the purposes specified in Part 5 of these Regulations, OFCOM shall take all reasonable steps to notify bidders of an alternative method of participating in the award process and any requirements relating to the authentication of communications made by means of the alternative method.

(4) Bidders must use the alternative method of participating in the award process in accordance with a notification under paragraph (3).

Rerunning rounds

71.—(1) Paragraph (2) applies where a round is in progress and OFCOM determine that it is not possible to continue the round because of technical failure (or an event or circumstance with similar effect on the continuation of the round).

(2) Where this paragraph applies, OFCOM shall—

- (a) take all reasonable steps to notify bidders of its determination under paragraph (1);
- (b) disregard the bids made in that round;
- (c) resume the award procedure from the end of the previous round (or, if there was no previous round, from the start of the first primary bid round).

(3) Paragraph (4) applies where OFCOM determine that it is not possible to continue the award process in accordance with the provisions of Part 5 of these Regulations because of technical failure (or an event or circumstance with similar effect on the continuation of the award process).

(4) Where this paragraph applies, OFCOM shall—

- (a) determine the rounds for which bids made in those rounds should be disregarded in order to have a fair and efficient outcome of the award process;
- (b) take all reasonable steps to notify bidders of its determinations under paragraph (3) and sub-paragraph (a);
- (c) resume the award process from the end of the latest round for which bids are not disregarded under sub-paragraph (a) or, where all bids are to be disregarded under that sub-paragraph, to rerun the award process from the start of the first primary bid round.

Refunds

72. OFCOM may, in such cases as they think fit, refund, in whole or in part, sums which have been paid to them in accordance with any provision of these Regulations.

30th November 2007

Philip Rutnam
Partner, Spectrum Policy
For and by authority of the Office of Communications

SCHEDULE 1

Regulation 2(2)

MEANING OF BAND, LOT AND PAIRED FREQUENCY RANGE

In these Regulations—

- (a) “band” means one of the frequency bands consisting of a lower sub-band and an upper sub-band listed in the column headed “Band” of the following table;
- (b) “lot”, in relation to a band, means two blocks of frequencies within the band where—
 - (i) the lower frequency limit and the upper frequency limit of each block is not specified;
 - (ii) the conditions relating to bandwidth and frequency separation specified in relation to that band in the column headed “Lot” of the following table are satisfied;
- (c) “paired frequency range”, in relation to a band, means two blocks of frequencies each specified by a lower frequency limit and an upper frequency limit such that the following conditions are satisfied—
 - (i) one block of frequencies is entirely within the lower sub-band of the band;
 - (ii) the other block of frequencies is entirely within the upper sub-band of the same band; and
 - (iii) the conditions specified in relation to that band in the column headed “Paired frequency range” of the following table.

<i>Band</i>			<i>Lot</i>			<i>Paired frequency range</i>
<i>Name</i>	<i>Lower sub-band</i>	<i>Upper sub-band</i>	<i>Name</i>	<i>Bandwidth of each of the two blocks of frequencies comprising the lot</i>	<i>Separation between (i) the lower frequency limit of one block of frequencies, and (ii) the lower frequency limit of the other block of frequencies</i>	
National 10 GHz band	The frequencies between 10.125 GHz and 10.225 GHz	The frequencies between 10.475 GHz and 10.575 GHz	National 10 GHz lot	10 MHz	350 MHz	<p>(a) The lower frequency limit of the lower block of frequencies is one of the following: 10.125 GHz, 10.135 GHz, 10.145 GHz, 10.155 GHz, 10.165 GHz, 10.175 GHz, 10.185 GHz, 10.195 GHz or 10.205 GHz;</p> <p>(b) the bandwidth of each block of frequencies is one of the following: 20 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz or 100 MHz; and</p> <p>(c) the separation between the lower frequency limit of one block of frequencies and the lower frequency limit of the other block of frequencies is 350 MHz.</p>
National 28 GHz band	The frequencies between 27.8285 GHz and 28.0525 GHz	The frequencies between 28.8365 GHz and 29.0605 GHz	National 28 GHz lot	112 MHz	1008 MHz	<p>(a) The lower frequency limit of the lower block of frequencies is one of the following: 27.8285 GHz or 27.9405 GHz;</p> <p>(b) the bandwidth of each block of frequencies is one of the following: 112 MHz or 224 MHz; and</p> <p>(c) the separation between the lower frequency limit of one block of frequencies and the lower frequency limit of the other block of frequencies is 1008 MHz.</p>

<i>Band</i>			<i>Lot</i>			<i>Paired frequency range</i>
<i>Name</i>	<i>Lower sub-band</i>	<i>Upper sub-band</i>	<i>Name</i>	<i>Bandwidth of each of the two blocks of frequencies comprising the lot</i>	<i>Separation between (i) the lower frequency limit of one block of frequencies, and (ii) the lower frequency limit of the other block of frequencies</i>	
First sub-national 28 GHz band	The frequencies between 28.0525 GHz and 28.1645 GHz	The frequencies between 29.0605 GHz and 29.1725 GHz	First sub-national 28 GHz lot	112 MHz	1008 MHz	(a) the lower block of frequencies is the frequencies between 28.0525 GHz and 28.1645 GHz; (b) the upper block of frequencies is the frequencies between 29.0605 GHz and 29.1725 GHz;
Second sub-national 28 GHz band	The frequencies between 28.1925 GHz and 28.3045 GHz	The frequencies between 29.2005 GHz and 29.3125 GHz	Second sub-national 28 GHz lot	112 MHz	1008 MHz	(a) the lower block of frequencies is the frequencies between 28.1925 GHz and 28.3045 GHz; (b) the upper block of frequencies is the frequencies between 29.2005 GHz and 29.3125 GHz;
Third sub-national 28 GHz band	The frequencies between 28.3325 GHz and 28.4445 GHz	The frequencies between 29.3405 GHz and 29.4525 GHz	Third sub-national 28 GHz lot	112 MHz	1008 MHz	(a) the lower block of frequencies is the frequencies between 28.3325 GHz and 28.4445 GHz; (b) the upper block of frequencies is the frequencies between 29.3405 GHz and 29.4525 GHz;

<i>Band</i>			<i>Lot</i>			<i>Paired frequency range</i>
<i>Name</i>	<i>Lower sub-band</i>	<i>Upper sub-band</i>	<i>Name</i>	<i>Bandwidth of each of the two blocks of frequencies comprising the lot</i>	<i>Separation between (i) the lower frequency limit of one block of frequencies, and (ii) the lower frequency limit of the other block of frequencies</i>	
National 32 GHz band	The frequencies between 31.815 GHz and 32.571 GHz	The frequencies between 32.627 GHz and 33.383 GHz	National 32 GHz lot	126 MHz	812 MHz	<p>(a) The lower frequency limit of the lower block of frequencies is one of the following: 31.815 GHz, 31.941 GHz, 32.067 GHz, 32.193 GHz, 32.319 GHz or 32.445 GHz;</p> <p>(b) the bandwidth of each block of frequencies is one of the following: 126 MHz, 252 MHz, 378 MHz, 504 MHz, 630 MHz or 756 MHz; and</p> <p>(c) the separation between the lower frequency limit of one block of frequencies and the lower frequency limit of the other block of frequencies is 812 MHz.</p>
National 40 GHz band	The frequencies between 40.50 GHz and 42.00 GHz	The frequencies between 42.00 GHz and 43.50 GHz	National 40 GHz lot	250 MHz	1.5 GHz	<p>(a) The lower frequency limit of the lower block of frequencies is one of the following: 40.50 GHz, 40.75 GHz, 41.00 GHz, 41.25 GHz, 41.50 GHz or 41.75 GHz;</p> <p>(b) the bandwidth of each block of frequencies is one of the following: 250 MHz, 500 MHz, 750 MHz, 1 GHz, 1.25 GHz, or 1.50 GHz; and</p> <p>(c) the separation between the lower frequency limit of one block of frequencies and the lower frequency limit of the other block of frequencies is 1.5 GHz.</p>

SCHEDULE 2

Regulation 4(3)(a)(i)

APPLICATION INFORMATION

1. Details of the applicant

Provide the following details for the applicant—

Applicant's full name

Registered number of company

Registered office of company

Applicant's contact address (if different from registered office)

Telephone number

Fax number

Electronic mail address

Bank sort code and account number

2. Authorised persons

Provide details of the name and position in the applicant of at least three and no more than five persons, each of whom has authority to bind the applicant for all purposes relating to the award process. Also provide a specimen signature of each of these persons.

3. Directors or members of managing body

Provide the name and job title of each of the directors of the applicant or each of the members of the managing body of the applicant.

4. Bidder group

Provide the names of the applicant's associates (as defined in the Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007 ("the Regulations")) and for each provide details of their material interest (as defined in the Regulations) in the applicant.

Provide the names of all other members of the bidder group (as defined in the Regulations) in respect of which the applicant has completed a document in the form set out in Schedule 4 to the Regulations in accordance with regulation 4(3)(a)(iii) of the Regulations.

5. Qualification to bid

In relation to the determination by the Office of Communications ("OFCOM") under regulation 7 of the Regulations concerning whether or not to qualify the applicant to bid in the award process—

- (a) provide details of any reason why the grant of a licence to the applicant may be prejudicial to the interests of national security;
- (b) provide details of any reason why the applicant may not be a fit and proper person to hold a licence;
- (c) state whether any member of the applicant's bidder group has colluded or attempted to collude, or is colluding or attempting to collude, with another person to distort the outcome of the award process and provide a description of any such collusion;
- (d) state whether any member of the applicant's bidder group has acted or is acting in a way which is likely to distort the outcome of the award process and provide a description of any such actions;

- (e) state whether any member of the applicant's bidder group, or any person to whom confidential information has been disclosed, has disclosed confidential information, whether directly or indirectly, to any person, and provide a description of the circumstances of any disclosure and the information disclosed, except where the disclosure—
 - (i) was to a member of the applicant's bidder group; or
 - (ii) was to OFCOM;
- (f) state whether any member of the applicant's bidder group has obtained or is obtaining or attempting to obtain confidential information relating to another applicant and provide a description of any such circumstances;
- (g) state whether any member of the applicant's bidder group is receiving or is attempting to receive services in relation to the award process from any person who has provided or is providing services to OFCOM in relation to the award process and provide a description of the services concerned; and
- (h) state whether (and provide a description of any circumstances in which) any person who is a member or a director or employee of a member of the applicant's bidder group and also a director or employee of a member of another bidder group is—
 - (i) taking part in the preparation of both bidder groups for participation in the award process; or
 - (ii) receiving confidential information relating to both bidder groups.

6. Other information

Provide a brief description of the substance of—

- (a) agreements (if any) relating to the management of the applicant; and
- (b) any criminal investigations or proceedings in the United Kingdom or overseas of which the applicant is aware relating to the applicant or any member of its bidder group or its directors or officers.

SCHEDULE 3

Regulation 4(3)(a)(ii)

APPLICATION DOCUMENT

[Insert name of applicant] (the “applicant”) represents and warrants to the Office of Communications that—

- (a) the persons authorised in section 2 of the applicant’s application have read and understood the Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007 (“the Regulations”), the terms of the licence to be granted under the Regulations and the Wireless Telegraphy Act 2006;
- (b) the applicant has the legal authority to participate in the award process under the Regulations and to have a licence granted to it, and has in place all necessary consents, permissions and internal approvals for this purpose;
- (c) the information provided in, or in support of, the application is, to the best of the knowledge and belief of the applicant true, accurate and complete in all material respects; and
- (d) the applicant is aware of the provisions in regulations 64 and 66 of the Regulations, including the provisions about disclosure of confidential information (as defined in the Regulations) and obtaining confidential information relating to another applicant or bidder and that any such activities may lead to forfeiture of sums on deposit and exclusion from the award process.

**DOCUMENT FOR MEMBER OF APPLICANT'S BIDDER GROUP
WHO IS NOT AN ASSOCIATE**

[Insert name of applicant or bidder] (the “applicant/bidder”) wishes to include [insert name and address of person to be included in bidder group who is not an associate] as a member of the applicant/bidder’s bidder group as defined in the Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007 (“the Regulations”) for the purpose of the award process under the Regulations.

Under regulation 7(2) of the Regulations an applicant shall not be qualified to bid in the award process where a member of its bidder group is also a member of another applicant’s bidder group. Regulations 64 and 66 contain provisions on disclosure of confidential information (as defined in the Regulations) and obtaining confidential information relating to another applicant or bidder. Under the Regulations such activities may lead to forfeiture of sums on deposit and exclusion from the award process.

1. Applicant/bidder

In relation to regulations 7(2), 64 and 66 of the Regulations, the applicant/bidder represents and warrants to the Office of Communications (“OFCOM”) that so far as it is aware, having made all reasonable enquiries, [insert name of person to be included in bidder group who is not an associate] is not a member of any other applicant’s or bidder’s bidder group.

The applicant/bidder undertakes to inform OFCOM immediately if it becomes aware that [insert name of person to be included in bidder group who is not an associate]—

- (a) has ever been or becomes a member of any other applicant’s or bidder’s bidder group;
- (b) has ever been or becomes a subsidiary of a member of any other applicant’s or bidder’s bidder group during the award process; or
- (c) has ever obtained or ever obtains confidential information (as defined in the Regulations) relating to another applicant or bidder.

2. [Insert name of person to be included in bidder group who is not an associate]

[Insert name of person to be included in bidder group who is not an associate] represents and warrants to OFCOM that it—

- (a) consents to be a member of the applicant/bidder’s bidder group;
- (b) is not a member of any other applicant’s or bidder’s bidder group; and
- (c) is aware of the provisions in regulations 64 and 66 of the Regulations about disclosure of confidential information (as defined in the Regulations) and obtaining confidential information relating to another applicant or bidder.

[Insert name of person to be included in bidder group who is not an associate] undertakes to OFCOM that it will immediately inform OFCOM and the applicant/bidder—

- (a) if it has ever been or becomes a member of any other applicant’s or bidder’s bidder group;
- (b) if it has ever been or becomes a subsidiary of a member of any other applicant’s or bidder’s bidder group during the award process; or
- (c) if it has ever obtained or if it ever obtains confidential information (as defined in the Regulations) relating to another applicant or bidder.

SCHEDULE 5

Regulation 11(1)(a)

PAIRED FREQUENCY RANGE SELECTION MENU WHERE THERE IS ONLY ONE BIDDER

Bidder's full name:

Bidder's address:

Telephone number:

Fax number:

E-mail address:

<i>Paired frequency range</i>	<i>Price of paired frequency range</i>	<i>Selection of paired frequency ranges (indicate selected paired frequency ranges with a cross ("X"), selecting no more than one paired frequency range from each band)</i>
National 10 GHz band		
1. 10.125–10.145 GHz paired with 10.475–10.495 GHz	£20,000	
2. 10.125–10.155 GHz paired with 10.475–1.505 GHz	£30,000	
3. 10.125–10.165 GHz paired with 10.475–10.515 GHz	£40,000	
4. 10.125–10.175 GHz paired with 10.475–10.525 GHz	£50,000	
5. 10.125–10.185 GHz paired with 10.475–10.535 GHz	£60,000	
6. 10.125–10.195 GHz paired with 10.475–10.545 GHz	£70,000	
7. 10.125–10.205 GHz paired with 10.475–10.555 GHz	£80,000	
8. 10.125–10.215 GHz paired with 10.475–10.565 GHz	£90,000	
9. 10.125–10.225 GHz paired with 10.475–10.575 GHz	£100,000	
10. 10.205–10.225 GHz paired with 10.555–10.575 GHz	£20,000	
11. 10.195–10.225 GHz paired with 10.545–10.575 GHz	£30,000	
12. 10.185–10.225 GHz paired with 10.535–10.575 GHz	£40,000	
13. 10.175–10.225 GHz paired with 10.525–10.575 GHz	£50,000	
14. 10.165–10.225 GHz paired with 10.515–10.575 GHz	£60,000	
15. 10.155–10.225 GHz paired with 10.505–10.575 GHz	£70,000	
16. 10.145–10.225 GHz paired with 10.495–10.575 GHz	£80,000	

17.	10.135–10.225 GHz paired with 10.485–10.575 GHz	£90,000
National 28 GHz band		
18.	27.8285–27.9405 GHz paired with 28.8365–28.9485 GHz	£60,000
19.	27.8285–28.0525 GHz paired with 28.8365–29.0605 GHz	£120,000
20.	27.9405–28.0525 GHz paired with 28.9485–29.0605 GHz	£60,000
First sub-national 28 GHz band		
21.	28.0525–28.1645 GHz paired with 29.0605–29.1725 GHz	£20,000
Second sub-national 28 GHz band		
22.	28.1925–28.3045 GHz paired with 29.2005–29.3125 GHz	£10,000
Third sub-national 28 GHz band		
23.	28.3325–28.4445 GHz paired with 29.3405–29.4525 GHz	£30,000
National 32 GHz band		
24.	31.815–31.941 GHz paired with 32.627–32.753 GHz	£60,000
25.	31.815–32.067 GHz paired with 32.627–32.879 GHz	£120,000
26.	31.815–32.193 GHz paired with 32.627–33.005 GHz	£180,000
27.	31.815–32.319 GHz paired with 32.627–33.131 GHz	£240,000
28.	31.815–32.445 GHz paired with 32.627–33.257 GHz	£300,000
29.	31.815–32.571 GHz paired with 32.627–33.383 GHz	£360,000
30.	32.445–32.571 GHz paired with 33.257–33.383 GHz	£60,000
31.	32.319–32.571 GHz paired with 33.131–33.383 GHz	£120,000
32.	32.193–32.571 GHz paired with 33.005–33.383 GHz	£180,000
33.	32.067–32.571 GHz paired with 32.879–33.383 GHz	£240,000
34.	31.941–32.571 GHz paired with 32.753–33.383 GHz	£300,000
National 40 GHz band		
35.	40.50–40.75 GHz paired with 42.00–42.25 GHz	£30,000
36.	40.50–41.00 GHz paired with 42.00–42.50 GHz	£60,000
37.	40.50–41.25 GHz paired with 42.00–42.75 GHz	£90,000
38.	40.50–41.50 GHz paired with 42.00–43.00 GHz	£120,000
39.	40.50–41.75 GHz paired with 42.00–43.25 GHz	£150,000
40.	40.50–42.00 GHz paired with 42.00–43.50 GHz	£180,000

41.	41.75–42.00 GHz paired with 43.25–43.50 GHz	£30,000
42.	41.50–42.00 GHz paired with 43.00–43.50 GHz	£60,000
43.	41.25–42.00 GHz paired with 42.75–43.50 GHz	£90,000
44.	41.00–42.00 GHz paired with 42.50–43.50 GHz	£120,000
45.	40.75–42.00 GHz paired with 42.25–43.50 GHz	£150,000

SCHEDULE 6

Regulation 19(1)

ROUND PRICE IN THE FIRST PRIMARY BID ROUND

In the first primary bid round the round price for a lot of a description mentioned in an entry in Column (1) is the price shown in the corresponding entry in Column (2).

<i>Column (1)</i> <i>Description of lot</i>	<i>Column (2)</i> <i>Price in the first primary bid round</i>
National 10 GHz lot	£10,000
National 28 GHz lot	£60,000
First sub-national 28 GHz lot	£20,000
Second sub-national 28 GHz lot	£10,000
Third sub-national 28 GHz lot	£30,000
National 32 GHz lot	£60,000
National 40 GHz lot	£30,000

SCHEDULE 7

Regulations 15(8), 22(3),
26(4) and 41(7)

ELIGIBILITY POINTS ASSOCIATED WITH LOTS

The number of eligibility points associated with a lot of a description mentioned in an entry in Column (1) is the number of points shown in the corresponding entry in Column (2).

<i>Column (1)</i> <i>Description of lot</i>	<i>Column (2)</i> <i>Number of eligibility points</i>
National 10 GHz lot	1
National 28 GHz lot	6
First sub-national 28 GHz lot	2
Second sub-national 28 GHz lot	1
Third sub-national 28 GHz lot	3
National 32 GHz lot	6
National 40 GHz lot	3

DETERMINATION OF BASE PRICE

Base price

1.—(1) OFCOM shall determine a base price for each winning principal stage bid by imposition of the requirements that the base prices must satisfy that are set out in paragraphs 2 to 5.

(2) Where a base price so determined includes a fraction of a pound, the base price shall be that price rounded up to the nearest pound.

First requirement

2. The base price for each winning principal stage bid shall be—

- (a) no less than the total of the round prices in the first primary bid round for the lots included in the selection of lots in that winning principal stage bid; and
- (b) no greater than the amount of that winning principal stage bid.

Second requirement

3.—(1) Taking the base prices for the winning principal stage bids together, the base prices shall be such that if—

- (a) the amount bid by each winning bidder for the selection of lots in its winning principal stage bid had been the base price rather than the amount of its winning principal stage bid (“reduced winning principal stage bid”), and
- (b) the amount bid by each winning bidder in respect of each other valid principal stage bid made by that bidder had been reduced by an amount equal to the difference between the amount of its winning principal stage bid and the base price for that winning principal stage bid,

the combination of the reduced winning principal stage bids submitted by the winning bidders would have been the valid combination of principal stage bids or one of the valid combinations of principal stage bids (as the case may be) having the highest total value of amounts bid.

(2) The bids mentioned in sub-paragraph (1)(a) and (b) shall, after reduction of the amount of those bids in accordance with those paragraphs, be treated as valid principal stage bids for the purposes of this paragraph.

Third requirement

4. Taking the base prices for the winning principal stage bids together, the total of those base prices shall be no greater than the total of any other prices for the winning principal stage bids that satisfy the requirements set out in paragraphs 2 and 3.

Fourth requirement

5.—(1) Taking the base prices for the winning principal stage bids together, the opportunity cost variance of those base prices calculated in accordance with sub-paragraph (2) shall be less than the opportunity cost variance, calculated in accordance with sub-paragraph (2), of any other prices for the winning principal stage bids that satisfy the requirements set out in paragraphs 2 to 4.

(2) The opportunity cost variance (“ OCV_B ”) of the prices mentioned in sub-paragraph (1) is the amount calculated in accordance with the formula—

$$OCV_B = \sum (p_B - c_B)^2$$

where—

“ p_B ” is the price for a winning principal stage bid; and

“ c_B ” is the amount calculated in accordance with the formula set out in sub-paragraph (3) in respect of that winning principal stage bid.

(3) The formula is—

$$c_B = u_B - t_B + b_B$$

where—

“ u_B ” is the amount calculated in accordance with sub-paragraph (4);

“ t_B ” is the total amount of the winning principal stage bids; and

“ b_B ” is the amount of the winning principal stage bid for which p_B is the price.

(4) The amount calculated in accordance with this sub-paragraph is the total amount of the valid combination of principal stage bids or one of the valid combinations of principal stage bids (as the case may be) having the highest total value of amounts bid, where the valid combination or combinations of principal stage bids do not include any of the principal stage bids made by the winning bidder that submitted the winning principal stage bid for which p_B is the price.

Interpretation

6. In this Schedule “valid combination of principal stage bids” shall be construed in accordance with regulation 41.

DETERMINATION OF ADDITIONAL PRICE

Additional price

1.—(1) OFCOM shall determine an additional price for each winning assignment stage bid by imposition of the requirements that the additional prices must satisfy that are set out in paragraphs 2 to 5.

(2) Where an additional price so determined includes a fraction of a pound, the additional price shall be that price rounded up to the nearest pound.

First requirement

2. The additional price for each winning assignment stage bid shall be no less than zero and no greater than the amount of that winning assignment stage bid.

Second requirement

3.—(1) Taking the additional prices for the winning assignment stage bids for paired frequency ranges in the same band together, the additional prices for winning assignment stage bids for paired frequency ranges in a band shall be such that if—

- (a) the amount bid by each winning bidder for the paired frequency range selected in its winning assignment stage bid for a paired frequency range in that band had been the additional price rather than the amount of its winning assignment stage bid (“reduced winning assignment stage bid”), and
- (b) subject to sub-paragraph (2), the amount bid by each winning bidder in respect of each other valid assignment stage bid made by that bidder for a paired frequency range in that band had been reduced by an amount equal to the difference between the amount of its winning assignment stage bid for a paired frequency range in that band and the additional price for that relevant winning assignment stage bid,

the combination of the reduced winning assignment stage bids submitted by the winning bidders would have been the valid combination of assignment stage bids or one of the valid combinations of assignment stage bids (as the case may be) for paired frequency ranges in that band having the highest total value of amounts bid.

(2) Where the amount of a bid has been reduced in accordance with sub-paragraph (1)(b) and is less than zero, the amount of that bid shall be treated as if it were zero for the purposes of this paragraph.

(3) The bids mentioned in sub-paragraph (1)(a) and (b) shall, after reduction of the amount of those bids in accordance with those paragraphs, be treated as valid assignment stage bids for the purposes of this paragraph.

Third requirement

4. Taking the additional prices for the winning assignment stage bids for paired frequency ranges in the same band together, the total of those additional prices for winning assignment stage bids for paired frequency ranges in a band shall be no greater than the total of any other prices for the winning assignment stage bids for paired frequency ranges in that band that satisfy the requirements set out in paragraphs 2 and 3.

Fourth requirement

5.—(1) Taking the additional prices for the winning assignment stage bids for paired frequency ranges in the same band together, the opportunity cost variance of those additional prices for winning assignment stage bids for paired frequency ranges in a band calculated in accordance with sub-paragraph (2) shall be less than the opportunity cost variance, calculated in accordance

with sub-paragraph (2), of any other prices for the winning assignment stage bids for paired frequency ranges in that band that satisfy the requirements set out in paragraphs 2 to 4.

(2) The opportunity cost variance (“ OCV_A ”) of the prices mentioned in sub-paragraph (1) is the amount calculated in accordance with the formula—

$$OCV_A = \sum (p_A - c_A)^2$$

where—

“ p_A ” is the price for a winning assignment stage bid; and

“ c_A ” is the amount calculated in accordance with the formula set out in sub-paragraph (3) in respect of that winning assignment stage bid.

(3) The formula is—

$$c_A = u_A - t_A + b_A$$

where—

“ u_A ” is the amount calculated in accordance with sub-paragraph (4);

“ t_A ” is the total amount of the winning assignment stage bids; and

“ b_A ” is the amount of the winning assignment stage bid for which p_A is the price.

(4) The amount calculated in accordance with this sub-paragraph is the total amount of the valid combination of assignment stage bids or one of the valid combinations of assignment stage bids (as the case may be) for paired frequency ranges in the same band having the highest total value of amounts bid where, for each assignment stage bid for a paired frequency range in that band made by the winning bidder that submitted the winning assignment stage bid for which p_A is the price, the amount of that assignment stage bid is treated as if it were zero for the purposes of this sub-paragraph.

(5) Where the amount of an assignment stage bid is treated as if it were zero under sub-paragraph (4), that assignment stage bid shall be treated as a valid assignment stage bid for the purposes of that sub-paragraph.

Interpretation

6. In this Schedule “valid combination of assignment stage bids” shall be construed in accordance with regulation 57.

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations set out the procedure that will apply to the grant of wireless telegraphy licences at frequencies between 10.125 GHz to 10.575 GHz, 27.8285 GHz to 29.4525 GHz, 31.815 GHz to 33.383 GHz and 40.50 GHz to 43.50 GHz.

To apply, a body corporate must deliver the documents required by regulation 4(3) to the Office of Communications (“OFCOM”) on a day specified by OFCOM on their internet website. An initial deposit of twenty-five thousand pounds must also be paid to OFCOM (regulation 4(3)(b)).

An applicant will not be qualified to bid where a member of its bidder group is also a member of another bidder group (regulation 7(2)). OFCOM will determine which applicants are qualified to bid in the auction, taking into account the matters set out in regulation 7(3). Under regulation 8, OFCOM will publish the names of all applicants qualified to bid on their internet website.

OFCOM will follow the procedure in Part 4 of these Regulations where there is only one bidder, or the procedure in Part 5 of these Regulations where there is more than one bidder.

Under Part 4, where there is only one bidder OFCOM will give the bidder a notice, setting out the deadline by when the completed paired frequency range selection menu must be provided to OFCOM and the deadline by when the bidder must transfer to OFCOM the balance of the licence fee (regulation 11).

Under Part 5, the process for the award of licences will consist of three stages.

The first stage, called the principal stage, is the procedure set out in Chapters 2 to 5 of Part 5. During the principal stage there will be an auction with at least two rounds during which bidders will be able to make bids for lots (a term defined in regulation 2(2)). OFCOM will determine the winning bids in accordance with regulation 41, and will determine the price payable in respect of each winning bid in accordance with regulation 42 and Schedule 8.

The second stage, called the assignment stage, is the procedure for determining the paired frequency ranges (a term defined in regulation 2(2)) that are to be assigned to each winning bidder. OFCOM will determine the winning assignment stage bids in accordance with the requirements of regulation 57, and the price payable in respect of each winning assignment stage bid in accordance with regulation 58 and Schedule 9.

The third stage, called the grant stage, is the procedure set out in Chapter 8 of Part 5. OFCOM will grant licences to winning bidders and refund any sums due to winning bidders under regulation 62(1)(b).

If in relation to an applicant which is qualified to bid or a bidder OFCOM are satisfied that certain events are occurring or have occurred and that the occurrence would materially affect the outcome of the award process, the applicant or bidder concerned will forfeit sums on deposit held by OFCOM and may be excluded from the award process (regulation 64).

A full regulatory impact assessment of the effect of these Regulations will have on the cost to business has been prepared. Copies of the impact assessment and copies of the publication referred to on page 20 of these Regulations are available to the public from the OFCOM library at Riverside House, 2a Southwark Bridge Road, London SE1 9HA, telephone 020 7981 3000 or on the OFCOM internet website at www.ofcom.org.uk. Copies of the impact assessment have also been placed in the libraries of both Houses of Parliament.

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STATUTORY INSTRUMENTS

2007 No.

ELECTRONIC COMMUNICATIONS

**The Wireless Telegraphy (Spectrum Trading) (Amendment)
(No. 2) Regulations 2007**

Made - - - - 30th November 2007

Coming into force - - 21st December 2007

The Office of Communications (“OFCOM”) make the following Regulations in exercise of the powers conferred by section 30(1) and (3) and section 122(7) of the Wireless Telegraphy Act 2006(a) (“the Act”).

Before making the Regulations OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in the notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

1. These Regulations may be cited as the Wireless Telegraphy (Spectrum Trading) (Amendment) (No. 2) Regulations 2007 and shall come into force on 21 December 2007.

Amendment of the Wireless Telegraphy (Spectrum Trading) Regulations 2004

2. Part 4 of the Schedule to the Wireless Telegraphy (Spectrum Trading) Regulations 2004(b) is amended by inserting at the end of Column 2—

“10.125–10.225 GHz
10.475–10.575 GHz
27.8285–28.0525 GHz
28.0525–28.1645 GHz
28.1925–28.3045 GHz
28.3325–28.4445 GHz
28.8365–29.0605 GHz
29.0605–29.1725 GHz

(a) 2006 c. 36.

(b) S.I. 2004/3154 as amended by S.I. 2006/339, S.I. 2006/1807 and S.I. 2007/380.

29.2005–29.3125 GHz

29.3405–29.4525 GHz

31.815–32.571 GHz

32.627–33.383 GHz

40.50–42.00 GHz

42.00–43.50 GHz”.

30th November 2007

Philip Rutnam
Partner, Spectrum Policy
For and by authority of the Office of Communications

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations amend the Wireless Telegraphy (Spectrum Trading) Regulations 2004 (S.I. 2004/3154) (the “Principal Regulations”), which have been amended on three other occasions (S.I. 2006/339, S.I. 2006/1807 and S.I. 2007/380).

Regulation 2 of these Regulations amends the Principal Regulations and authorises the transfer of rights and obligations arising by virtue of a wireless telegraphy licence within the frequency bands stated.

A full regulatory impact assessment of the effect that these Regulations will have on the costs to business is available to the public from the OFCOM library at Riverside House, 2a Southwark Bridge Road, London SE1 9HA (Tel: 020 7981 3000) or on the OFCOM internet website at www.ofcom.org.uk. Copies of the report have also been placed in the libraries of both Houses of Parliament.

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STATUTORY INSTRUMENTS

2007 No.

ELECTRONIC COMMUNICATIONS

**The Wireless Telegraphy (Register) (Amendment) (No. 2)
Regulations 2007**

Made - - - - 30th November 2007

Coming into force - - 21st December 2007

The Office of Communications (“OFCOM”) make the following Regulations in exercise of the powers conferred by section 31(1) and (2) and section 122(7) of the Wireless Telegraphy Act 2006(a) (“the Act”).

Before making the Regulations OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in the notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

1. These Regulations may be cited as the Wireless Telegraphy (Register) (Amendment) (No. 2) Regulations 2007 and shall come into force on 21 December 2007.

Amendment of the Wireless Telegraphy (Register) Regulations 2004

2. Part 4 of the Schedule to the Wireless Telegraphy (Register) Regulations 2004(b) is amended by inserting at the end of Column 2—

“10.125–10.225 GHz
10.475–10.575 GHz
27.8285–28.0525 GHz
28.0525–28.1645 GHz
28.1925–28.3045 GHz
28.3325–28.4445 GHz
28.8365–29.0605 GHz
29.0605–29.1725 GHz

(a) 2006 c. 36.

(b) S.I. 2004/3155 as amended by S.I. 2006/340, S.I. 2006/1808 and S.I. 2007/381.

29.2005–29.3125 GHz

29.3405–29.4525 GHz

31.815–32.571 GHz

32.627–33.383 GHz

40.50–42.00 GHz

42.00–43.50 GHz”.

30th November 2007

Philip Rutnam
Partner, Spectrum Policy
For and by authority of the Office of Communications

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations amend the Wireless Telegraphy (Register) Regulations 2004 (S.I. 2004/3155) (the “Principal Regulations”), which have been amended on three other occasions (S.I. 2006/340, S.I. 2006/1808 and S.I. 2007/381).

The Principal Regulations require OFCOM to establish and maintain a public register of relevant information relating to wireless telegraphy licences of certain classes which apply to a station or apparatus operating within certain frequency bands specified in the Schedule to the Principal Regulations.

Regulation 2 of these Regulations amends the Schedule to the Principal Regulations by specifying further frequencies.

A full regulatory impact assessment of the effect that these Regulations will have on the costs to business is available to the public from OFCOM at Riverside House, 2a Southwark Bridge Road, London SE1 9HA (Tel: 020 7981 3000) or on the OFCOM internet website at www.ofcom.org.uk. Copies of the report have also been placed in the libraries of both Houses of Parliament.

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STATUTORY INSTRUMENTS

2007 No.

ELECTRONIC COMMUNICATIONS

**The Wireless Telegraphy (Limitation of Number of Spectrum
Access Licences) (No. 2) Order 2007**

Made - - - - 30th November 2007

Coming into force - - 21st December 2007

The Office of Communications (“OFCOM”) make the following Order in exercise of the powers conferred by section 29(1) to (3) of the Wireless Telegraphy Act 2006(a) (“the Act”).

Before making the Order OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in the notice in accordance with section 122(4)(c) of the Act.

Citation, commencement and extent

1.—(1) This Order may be cited as the Wireless Telegraphy (Limitation of Number of Spectrum Access Licences) (No. 2) Order 2007 and shall come into force on 21 December 2007.

(2) This Order shall not extend to the Channel Islands or to the Isle of Man.

Limitation of licences

2.—(1) OFCOM shall grant a limited number of wireless telegraphy licences for the use of the following frequency bands in the United Kingdom—

10.125–10.225 GHz;

10.475–10.575 GHz;

27.8285–28.0525 GHz;

28.0525–28.1645 GHz;

28.1925–28.3045 GHz;

28.3325–28.4445 GHz;

28.8365–29.0605 GHz;

29.0605–29.1725 GHz;

(a) 2006 c. 36.

29.2005–29.3125 GHz;

29.3405–29.4525 GHz;

31.815–32.571 GHz;

32.627–33.383 GHz;

40.50–42.00 GHz;

42.00–43.50 GHz.

(2) In determining the number of licences to be granted for the use of these frequency bands and the persons to whom the licences will be granted, OFCOM shall apply the procedure set out in the Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007^(a).

30th November 2007

Philip Rutnam
Partner, Spectrum Policy
For and by authority of the Office of Communications

(a) S.I. [insert number]

EXPLANATORY NOTE

(This note is not part of the Order)

This Order is made under section 29 of the Wireless Telegraphy Act 2006 (c.36) (“the Act”). Section 29 of the Act implements Article 7(1)(c) of the Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive) (OJ No L 108, 24.4.02, p21). Under section 29(1) of the Act OFCOM may, if they consider it appropriate for the purpose of securing the efficient use of the electromagnetic spectrum to impose limitations on the use of particular frequencies, make an order imposing those limitations.

Article 2(1) of this Order specifies the frequency bands for the use of which OFCOM will grant only a limited number of wireless telegraphy licences in the United Kingdom.

A full regulatory impact assessment of the effect that this Order will have on the costs to business is available from the OFCOM library at Riverside House, 2a Southwark Bridge Road, London SE1 9HA (Tel: 020 7981 3000) or on the OFCOM internet website at www.ofcom.org.uk. Copies of the report have also been placed in the libraries of both Houses of Parliament.

Annex 3

Regulatory Impact Assessments

Regulatory Impact Assessment – The Wireless Telegraphy (Licence Award) (No. 2) Regulations 2007

- A3.1 The analysis set out in this document represents a Regulatory Impact Assessment (“RIA”), following Ofcom’s notice of proposals to make the Regulations⁹, published on 7 August 2007 (the “Notice”), and its statement on the Notice consultation¹⁰.
- A3.2 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. In producing the RIA in this document, Ofcom has had regard to such general guidance as it considers appropriate, including related Cabinet Office guidance.

The issue being considered and the citizen/consumer interest

- A3.3 Following its consultation published on 26 June 2006 (The “June Consultation”) and statement published on 7 August 2007 (the “August Statement”)¹¹ on the award of the available spectrum: 10 GHz, 28 GHz, 32 GHz and 40 GHz (the “Bands”), Ofcom has decided to award licences by means of an auction.
- A3.4 This RIA provides an update to the Regulatory Impact Assessments found in the June Consultation and the Notice. It takes into account the changes in packaging and auction design proposed by Ofcom in the discussion document published on 11 January 2007 (the “January Discussion Document”)¹² and those responses to the June Consultation and August Statement which are relevant to these changes and the original RIA.
- A3.5 In terms of citizen/consumer interest Ofcom believes that consumers could benefit from the spectrum award in a number of ways, depending on the use made of the spectrum. For example business end-users could directly benefit from Fixed Wireless Access (FWA) and Programme Making and Special Events (PMSE) services. Consumers could also indirectly benefit from spectrum owners making use of the spectrum in a variety of services, including point-to-multipoint cellular and FWA network backhaul applications, PMSE applications and CCTV networks. As set out by Ofcom previously in its spectrum framework plan documents, Ofcom’s view is that where possible, citizen/consumer interests in relation to the allocation of spectrum are best served through making spectrum available as soon as practical through open, competitive spectrum auctions.

⁹ Notice of Ofcom’s proposal to make regulations in connection with the award of 10 GHz, 28 GHz, 32 GHz and 40 GHz is available at <http://www.ofcom.org.uk/consult/condocs/10-40notice/10-40notice.pdf>

¹⁰ Published on 7 August 2007 and available at

<http://www.ofcom.org.uk/consult/condocs/availspec/statement/statement.pdf>

¹¹ The June Consultation and the August Statement are available at

http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10_40/

¹² Published on 11 January 2007 and available at

<http://www.ofcom.org.uk/consult/condocs/10-40GHz/10-40ghz.pdf>

Introduction

- A3.6 The consultation considered a number of factors relevant to the award of the spectrum, including Ofcom's powers and approach to spectrum management, the availability and current uses of the spectrum in each band, the potential demand for spectrum in each band, the likely spectrum packaging requirements and auction design.
- A3.7 The RIA in the June consultation considered the advantages and disadvantages of a number of options for packaging and awarding the spectrum. The January discussion document presented Ofcom's revised packaging proposals in the light of responses to the June consultation and the implications for the appropriate auction design. This RIA focuses on Ofcom's choice of auction design and packaging proposals presented in the August Statement.
- A3.8 The key proposals set out in the June consultation for the proposed award of licences in the Bands were as follows:
- Spectrum to be licensed, with all licences to be awarded through a single auction;
 - A technology and service neutral approach should be used;
 - The auction to take the form of a simple simultaneous multiple round auction (SMRA), with no need to introduce combinatorial bidding;
 - The winning bidders to be those which submitted the highest bids for each licence; and
 - A minimum price of £50,000 to be set for each licence.

The consultation also explained Ofcom's proposal for deferring the award of licences in the 40 GHz band.

A3.9 The key proposals in the consultation for the spectrum packaging were as follows:

Band	Spectrum packages
10 GHz	One UK licence of 2x100 MHz
28 GHz	Two UK licences each of 2x112 MHz Three 'geographically limited' licences each of 2x112 MHz, with varying geographical coverage (see Annex 9 of the June consultation for maps illustrating this)
32 GHz	Six UK licences each of 2x126 MHz
TOTAL	12 licences

Consultation responses on spectrum packaging and auction design

A3.10 Ofcom received several responses to the consultation that commented on the auction design and packaging of spectrum¹³. In summary these comments were:

- It would be more appropriate to offer smaller lots in the 10 GHz band in order to maximise flexibility and overall efficiency of use. There was however no real consensus about the appropriate size of lots; for example a number of respondents suggested that two lots of 2x50 MHz be made available while another suggested five lots of 2x20 MHz.
- One respondent suggested that there should be larger lots in the 32 GHz band and if larger lots were not available the respondent would be exposed to aggregation risk.
- Interest was expressed in acquiring spectrum in the 40 GHz band.
- One respondent suggested that the packaging of lots and auction design should ensure that aggregation risk to bidders was minimised as far as possible.

In the light of these responses Ofcom put forward amended proposals for spectrum packaging and auction design in the January discussion document.

¹³ The responses may be found at <http://www.ofcom.org.uk/consult/condocs/10ghz/responses/>

Packaging

A3.11 In response to the comments summarised above, Ofcom reviewed the appropriate way to package the available spectrum. The two changes it made were the division of the 10 GHz band into ten lots each of 2x10 MHz, although subject to a requirement that each bidder bids for at least two such lots (i.e. a minimum of 2x20 MHz), and the inclusion of the 40 GHz band in the award, divided into six lots of 2x250 MHz.

A3.12 The table below summarises the advantages and disadvantages of Ofcom's original proposal (as outlined in the June consultation) and Ofcom's revised proposal in the January discussion document, which forms the basis of the award that is covered by the proposed Regulations.

Band & option	Advantages	Disadvantages
10 GHz		
Original option: one UK-wide paired lot of 2x100 MHz	Eliminates complementarity issue, thereby reducing aggregation risk to some bidders and substantially simplifying auction design.	Bidders requiring a single unpaired lot may have to co-ordinate their bidding with other parties or face acquiring more spectrum than they require. Lot size too big for some potential bidders. Again, bidders would have to co-ordinate their bidding with other parties or face acquiring more spectrum than they require.
Revised plan: 10 UK-wide paired lots of 2x100 MHz	Smaller lots should maximise flexibility and overall efficiency of use.	Introduces complementarity, but this is not a major problem as long as there is an appropriate auction design, which can address this issue. This is one of the reasons why Ofcom has proposed to switch to a combinatorial clock auction format.
28 GHz		
Original option stands: two UK-wide paired lots of 2x112 MHz	Appears to be consistent with demand Offering paired lots simplifies auction design.	If a bidder wanted unpaired spectrum it would have to co-ordinate with another bidder also wanting unpaired spectrum or might have to acquire more than it required. However Ofcom has had no indication that this might be the case

<p>Original option stands: three geographically limited paired lots of 2x112 MHz</p>	<p>The auction design is simplified where the licence regions used in the 28 GHz auction held in 2000 are aggregated into a single coverage area.</p>	<p>Does not cater for (limited) interest shown in smaller regional lots. Ofcom has considered a request to change the geographical coverage of one of the lots to complement a respondent's existing licence coverage area. However this is not practicable because none of the available lots alone has coverage that would complement the respondent's coverage area.</p>
<p>32 GHz</p>		
<p>Original option stands: six UK-wide paired lots of 2x126 MHz</p>	<p>Matches prospective bidders' demand.</p> <p>Similarly sized packages to other bands increases substitutability across bands.</p>	<p>There may be complementarity between lots in this band for those bidders who require larger lots. However with Ofcom's proposed combinatorial clock auction format bidders can bid for multiple lots without facing aggregation risks.</p>
<p>40 GHz</p>		
<p>Original option: award to be deferred</p>	<p>Apparent lack of demand may not justify cost of making award.</p>	
<p>Revised plan: six UK-wide paired lots of 2x250 MHz</p>	<p>Appears to be consistent with demand</p> <p>Consistent with Ofcom's spectrum management objectives.</p> <p>Maximises flexibility of spectrum offerings</p>	<p>There may be complementarity between lots in this band for those bidders who require larger lots. However with Ofcom's proposed combinatorial clock auction format bidders can bid for multiple lots without facing aggregation risks.</p>

A3.13 Having considered the relative merits of the various options in terms of the likely strength of demand for the different packages (in each of the bands), the consequences for auction design and the likely impact on the downstream competition, Ofcom plans to auction the following spectrum packages:

- 10 GHz: Ten UK-wide paired lots of 2x100 MHz
- 28 GHz: Two UK-wide paired lots of 2x112 MHz
- 28 GHz: Three 'geographically limited' paired lots of 2x112 MHz, each with varying geographical coverage
- 32 GHz: Six UK-wide paired lots of 2x126 MHz
- 40 GHz: Six UK-wide paired lots of 2x250 MHz.

Auction design options for the different packages

A3.14 In the June consultation Ofcom concluded that using a simultaneous, multiple round process would be the most appropriate for the award of lots in the bands under consideration, rather than sequential or single round formats. In addition Ofcom did not believe that there would be any benefits to introducing combinatorial bidding to the auction design given the lots proposed.

A3.15 In response to the comments Ofcom received following publication of the June consultation document and the January discussion document and the changes made to packaging of auction lots, Ofcom reviewed the auction design. In particular Ofcom took account a key issue, which was that the revised packaging arrangements had the effect that, from a bidders perspective, lots in particular bands might be substitutable or complementary.

A3.16 The table below reviews the advantages and disadvantages of key auction design features:

Auction feature	Advantages	Disadvantages
Auction format Sequential award of lots		A sequential sale is problematic since bidders will not know the price to be paid for substitute lots.
Multiple round (ascending bids)	In the absence of competition concerns, considered to produce more efficient outcomes as bidders can learn and refine their own valuations from observing behaviour of competitors over the course of the auction. Allowing bidders to respond to relative prices reduces substitution risks.	Award process more complex than a single round award, but not so great as to justify using a significantly less efficient auction format.
Single round (sealed bids)	Simpler to administer. May encourage participation when there are bidder asymmetries	Does not enable bidders to gain information on lot values from other bidders' behaviour. This is of particular relevance for this auction, given the concerns about common value uncertainty (see table below)
Use of package (combinatorial) bidding	Key benefit is that there are strong complementarities amongst lots. Given the packaging proposed, this is particularly relevant for this auction.	Makes an SMRA auction significantly more complex, especially if all possible combinations are allowed.

Nature of lots		
Generic lots	Simplifies the auction	Requires follow-up action to assign specific spectrum packages.
Specific lots	Allows bidders to express a preference between lots, which is appropriate where there are material differences between lots. Given the packaging proposed this is not particularly relevant for this auction.	Significantly more complex for bidders than award with generic lots.
Pricing rule 2 nd price auctions	Provides incentives for bidders to bid true values, so reducing risk of bid shading and strategic demand reduction	May be relatively complex to calculate the amount payable by winners, although this burden falls on the auctioneer rather than the bidder.

A3.17 Ofcom’s view is that using a simultaneous multiple round process is the most appropriate approach for the award of these bands, rather than sequential or single round formats. In addition, given the changes to spectrum packaging it is necessary to cater for bidding on combinations of lots. The combinatorial clock auction that Ofcom is planning for this award is designed to do this in a way that avoids the complexities of combinatorial bidding within an SMRA.

A3.18 The table below summarises the advantages and disadvantages of Ofcom’s original proposal for auction design, as outlined in the June consultation, and Ofcom’s combinatorial clock auction design.

Auction format	Advantages	Disadvantages
Common value uncertainty	There is likely to be common value uncertainty in this auction because some bidders are likely to want to use this spectrum to provide similar services to common markets. Common value uncertainty can result in inefficient outcomes.	
Original proposal: simple SMRA	Effective in terms of reducing common value uncertainty; bidders can observe how their rivals’ demand changes in response to prices.	
Combinatorial clock auction (“CCA”)	Effective, as for SMRA outlined above. Best and final offers may provide richer information than the simple SMRA about bidders’ willingness to substitute demand across lots.	

Aggregation risk	Given likely demand in the 32 GHz band and changes to packaging, particularly in the 10 GHz band, bidders are likely to view lots as complementary. Bidders may need to submit bids for packages of lots.	
Original proposal: simple SMRA		<p>A simple SMRA is not effective at addressing aggregation risk and bidders risk being left with stranded lots.</p> <p>A combinatorial SMRA would be complex for bidders, with the onus on them to make extensive bids in each round.</p>
CCA	<p>Under a CCA it is relatively straightforward for a bidder to submit bids for packages of lots.</p> <p>All bids are mutually exclusive, thereby minimising aggregation risks.</p>	
Threshold problem	Small bidders (wanting few lots) may find it difficult to operate in implicit consortia capable of displacing larger bidders (wanting to aggregate many lots), even though their collective valuation may be higher.	
Original proposal: simple SMRA	Simple SMRA, with no package bidding, would avoid the threshold problem. However this would not be appropriate given packaging and need to make package bids.	Combinatorial SMRA (as would be appropriate given the proposed packaging) introduces threshold risk.
CCA	Bidders will have more information about rival bids if best and final offers are released each round than under SMRA. This may facilitate bidding by implicit consortia, possibly reducing threshold problems.	CCA introduces threshold risk.
Complexity	Other things being equal, simpler auctions are preferable from the perspective of bidders. The more straightforward and transparent the auction is, the more likely they are to develop an efficient bidding strategy, and the less likely they are to make mistakes. If the auction format is so complicated that bidders are unable to learn from the progress of the auction or bid their preferences, then this could introduce inefficiencies and risk a sub-optimal allocation of the available spectrum.	

Original proposal: simple SMRA		<p>The requirement for package bidding makes an SMRA very complex for bidders to understand since they would have to have full understanding about all the possible packages they would purchase at each price.</p> <p>In addition bidders would have to take into account the aggregation risk they face when making each bid.</p> <p>These factors may lead to an inefficient outcome.</p>
CCA	<p>The CCA is more straightforward for bidders since they would not need to submit bids on the full range of possible packages (as with SMRA) but on their preferred package at each given price.</p> <p>The use of generic lots reduces the number of packages bidders have to consider in the clock stage.</p> <p>The CCA aids price discovery for bidders which should enable an efficient strategy for bidding (and hence an efficient auction outcome).</p>	Ofcom accepts that the proposed arrangements involve a degree of complexity. However, this complexity arises from the packaging proposals (the reasons for which are set out above) rather than from the auction design.
Strategic bidding	Strategic behaviour can distort the efficient outcome of the auction. Examples include: signalling, price manipulation, punishment, parking and bid shading.	
Original proposal: simple SMRA		SMRA may be vulnerable to strategic behaviour which can distort the auction outcome and reduce efficiency. For example since only the highest bids on specific lots are ultimately binding there are likely to be strong incentives for strategic bidding.
CCA	Stronger incentives for straightforward bidding since any bid submitted in any round could potentially become a winning bid.	
Strategic demand reduction	Strategic demand reduction is most likely to be a problem in auctions where there a few bidders seeking many lots and demand is not greatly in excess of supply. Such a scenario appears possible for this award.	

Original proposal: simple SMRA		SMRAs are potentially vulnerable to strategic demand reduction. Bidders may be tempted to reduce their demand in the auction with the objective of achieving a lower price per lot than would be possible if they bid strictly based on their valuation. This may reduce the efficiency of the auction outcome.
CCA		Clock auctions may also be vulnerable to strategic demand reduction.
Weak competition		
Original proposal: simple SMRA		<p>SMRA formats may be vulnerable to weak competition, either as a result of bidder asymmetries (which discourage perceived weaker bidders from participating) or 'demand fixing' where bidders co-ordinate prior to the auction in an attempt to eliminate excess demand and thus achieve low prices.</p> <p>Measures to restrict transparency – such as hiding the number or names of applicants – may help to prevent coordination.</p>
CCA		The CCA is also potentially vulnerable to demand fixing. As with the SMRA measures to restrict transparency may help to prevent coordination. Alternatively, the CCA could be terminated early (i.e. before demand is reduced to less than equal supply).
Unsold lots	Unsold lots are only a concern if they occur because bidders have been unable or unwilling to express the full value of their demand for different packages of lots, owing to spectrum packaging or auction design. If unsold lots occur purely as a result of lack of market demand this is an unavoidable outcome and does not affect the efficiency of the award.	
Original proposal: simple SMRA		

CCA	The CCA format largely eliminates the problem of inefficiently unsold lots through the use of the 'best and final offers' stage. This stage allows bidders to express their preferences for many different packages. The best and final offers are considered to see if there might be a more efficient allocation of the available spectrum in the event that there were unallocated lots at the end of the clock stage.	
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A3.19 Ofcom believes that the simple SMRA and CCA should both perform well where lots are substitutes and competition is reasonably strong. However, the CCA has particular strengths compared with a simple SMRA, notably in handling the situation where lots within and across bands may be complementary. Given the changes to packaging made, Ofcom therefore believes that the CCA format is preferable to an SMRA.

Competition issues

A3.20 In the June consultation Ofcom considered whether the auction of the spectrum could negatively affect competition in downstream markets if control of all or significant proportion of the spectrum were to be gained by a limited number of bidders. In addition Ofcom also considered whether any competition problems would be caused if a successful bidder already held a position of strength in any markets such that it might have anti-competitive motives for acquiring the spectrum. If this were to be the case it could be appropriate to package the spectrum in such a way as to promote multiple entry and/or place restrictions on the amount of spectrum that any single bidder could acquire.

A3.21 Ofcom commissioned research into the potential uses for the spectrum due to be auctioned. As noted in the consultation document, 10GHz spectrum would be of interest to broadcasters (for PMSE applications), mobile operators (for backhaul operations) and FWA operators (for backhaul operations and FWA service provision). 28GHz and 32GHz spectrum is likely to be of interest to mobile and FWA operators (for backhaul operations). Responses to the consultation document suggested that 40GHz spectrum might represent substitute spectrum for 32GHz spectrum for some users.

A3.22 Advisors to Ofcom, who undertook this research, suggested that potential competition concerns might arise, for example, if one or a small group of broadcasters purchased all the available 10GHz spectrum and were able to exclude other PMSE users from access to the spectrum. Alternatively one or a small number of mobile operators purchased all the available 10GHz, 28GHz and 32GHz spectrum, thereby excluding access by other operators.

A3.23 The extent to which there are close substitutes for the spectrum being auctioned will determine the extent to which Ofcom has concerns about the possible impact on

competition in downstream markets. There may be substitutable spectrum which can be used to develop the same products or there may be substitutable services in downstream markets.

- A3.24 For example Ofcom does not believe that there are any particular competition concerns with respect to FWA operators excluding access to other FWA operators since FWA operators face considerable competition from wired alternatives (e.g. cable and DSL services). In addition a number of alternative spectrum bands may be used for FWA applications, not least three of the bands on offer in this auction (10GHz, 28GHz and 32GHz). Similarly these bands and others are potentially substitutable for mobile operators wishing to use the spectrum for backhaul operations.
- A3.25 There are a number of spectrum bands which could be used for PMSE services and spectrum in some bands may become accessible to PMSE operators in the future, which would undermine any market power exercised by a large broadcaster which purchased all of the available 10 GHz spectrum.
- A3.26 If a single bidder were to acquire all available spectrum for a particular use this could have potential to cause competition concerns, through the possibility that such a bidder could utilise its position to create a barrier to entry by excluding competitors access to a key input. As noted in the consultation document, Ofcom does not believe that there is a high risk of downstream competition concerns arising from the proposed auction, given the substitutes available for the spectrum and the possibility of further substitutable spectrum being released. In addition, Ofcom has not identified potential bidders who might have anti-competitive motives for acquiring the spectrum in order to foreclose particular downstream markets. In addition competition law or specific regulatory remedies are available to address such issues if they arise.

Costs to Ofcom

- A3.27 The costs of Ofcom's decision to award the licences relate mainly to the costs of carrying out the award process. The administrative costs of the award process should be small in relation to the benefit generated to the economy and the award process is very unlikely to have a negative financial impact.

Business sectors affected

- A3.28 The main business sectors likely to be affected by this proposal are fixed and mobile communications service provision and broadcast services. Ofcom believes that the net effect of the award on these businesses will be positive given the increased availability of spectrum necessary to support their retail and wholesale service provision.
- A3.29 Other business sectors may benefit from a more efficient supply of communications services as a result of this proposal.

Conclusion

- A3.30 Based on the available evidence, Ofcom believes that a combinational clock auction is likely to secure the greatest benefit in terms of the efficient allocation of the spectrum and realisation of potential synergies in the context of efficient use of the spectrum. It also appears to be simpler and more practical to implement than the other options considered. One alternative in theory would be a simultaneous SMRA

Award Process. However, Ofcom's research has shown that it appears difficult to find a practical way of designing a simultaneous SMRA Award Process which is capable of facilitating the realisation of synergies and which avoids strategic complexity for bidders.

- A3.31 In addition Ofcom believes that auction of this spectrum is likely to give positive net benefits for a number of business sectors and ultimately consumers and citizens.

Regulatory Impact Assessment – The Wireless Telegraphy (Spectrum Trading) (Amendment) (No. 2) Regulations 2007

- A3.32 The analysis set out in this document represents a Regulatory Impact Assessment ("RIA") following Ofcom's notice of proposals to make the Regulations¹⁴, published on 7 August 2007 (the "Notice"), and its statement on the Notice consultation¹⁵
- A3.33 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. In producing the RIA in this document, Ofcom has had regard to such general guidance as it considers appropriate, including related Cabinet Office guidance.

Proposal, purpose and intended effect

- A3.34 This RIA for the Wireless Telegraphy (Spectrum Trading) (Amendment) (No.2) Regulations 2007 relates to Ofcom's planned grant of licences to use the available spectrum 10 GHz, 28 GHz, 32 GHz and 40 GHz¹⁶ (the "Bands"). The purpose of these regulations is to permit the transfer of all rights and obligations relating to the wireless telegraphy licences in the Bands, also known as spectrum trading. Ofcom intends that all types of transfers, i.e. outright, concurrent, partial and total transfers will be permitted.
- A3.35 Ofcom believes that consumers could benefit from the spectrum award in a number of ways, depending on the use made of the spectrum. For example business end-users could directly benefit from Fixed Wireless Access (FWA) and Programme Making and Special Events (PMSE) services. Consumers could also indirectly benefit from spectrum owners making use of the spectrum in a variety of services, including point-to-multipoint cellular and FWA network backhaul applications, PMSE applications and CCTV networks. As set out by Ofcom previously in its spectrum framework plan documents, Ofcom's view is that where possible, citizen/consumer interests in relation to the allocation of spectrum are best served through spectrum trading and liberalisation.

¹⁴ Notice of Ofcom's proposal to make regulations in connection with the award of 10 GHz, 28 GHz, 32 GHz and 40 GHz, available at <http://www.ofcom.org.uk/consult/condocs/10-40notice/10-40notice.pdf>

¹⁵ Published on 7 August 2007 and available at <http://www.ofcom.org.uk/consult/condocs/10-40GHz/statement/statement.pdf>

¹⁶ Ofcom's plans are the result of detailed award proposals in June 2006 and a discussion document in January 2007 (http://www.ofcom.org.uk/radiocomms/spectrumawards/awardspending/award_10-40/) and the consultation and statement on the Notice.

Costs and benefits to business

- A3.36 Ofcom considered the benefits of spectrum trading in the Regulatory Impact Assessment for the Spectrum Trading and Wireless Telegraphy Register Regulations 2004 published in December 2004. It concluded that the likely benefits of spectrum trading generally outweighed the costs. It also concluded that the costs to business would be proportionate, because the costs of spectrum trading would only fall on those who traded (and for whom the benefit of the spectrum trade should exceed the costs anyway). This analysis of the general benefits of introducing spectrum trading should also apply to the Bands.
- A3.37 Ofcom considered whether all types of transfer should be allowed, i.e. total, partial and concurrent transfers. Ofcom can see no reason why its general conclusion that the benefits of trading are likely to substantially outweigh the costs would not be true for all types of transfer. It is unlikely that the additional coordination costs for third parties, which might arise as a result of concurrent or partial transfers, would be significant.

Costs to Ofcom

- A3.38 Ofcom would incur very little additional cost as a result of this proposal. The framework for spectrum trading has already been set up and including the Bands within the framework should require little additional cost.

Business sectors affected

- A3.39 The main business sectors likely to be affected by this proposal are fixed and mobile communications service provision and broadcast services. Ofcom believes that the net effect of the award on these businesses will be positive given the increased availability of spectrum necessary to support their retail and wholesale service provision.
- A3.40 Other business sectors may benefit from a more efficient supply of communications services as a result of this proposal.

Conclusion

- A3.41 Based on the available evidence, Ofcom believes that the auction will deliver net benefits arising from the efficient award and subsequent use of the spectrum. Ofcom believes that the auction is likely to lead to increased competition in downstream markets and benefit a number of business sectors and ultimately consumers and citizens for all types of transfer.

Regulatory Impact Assessment – The Wireless Telegraphy (Register) (Amendment) (No. 2) Regulations 2007

- A3.42 The analysis set out in this document represents a Regulatory Impact Assessment (“RIA”) following Ofcom’s notice of proposals to make the Regulations¹⁷, published on 7 August 2007 (the “Notice”), and its statement on the Notice consultation¹⁸.

¹⁷ Notice of Ofcom’s proposal to make regulations in connection with the award of 1785-1805 MHz, available at <http://www.ofcom.org.uk/consult/condocs/10-40notice/10-40notice.pdf>

¹⁸ Published on 7 August 2007 and available at <http://ofcom.org.uk/consult/condocs/10-40GHz/statement/statement.pdf>

- A3.43 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. In producing the RIA in this document, Ofcom has had regard to such general guidance as it considers appropriate, including related Cabinet Office guidance.

Proposal, purpose and intended effect

- A3.44 In order to enhance the general development of a secondary market for the right to use spectrum, Ofcom has established and maintains a register about spectrum licences – the Wireless Telegraphy Register.
- A3.45 The intended effect of the Regulations is to enable information about the licences in the available spectrum 10 GHz, 28 GHz, 32 GHz and 40 GHz (the “Bands”) to be published in the Wireless Telegraphy Register. In doing so this should facilitate spectrum trading by, except where security considerations prevent publication of information, providing information which will enable potential buyers to find out, who holds what frequencies and the constraints on the use of the specific frequencies or bands.
- A3.46 Ofcom believes that consumers could benefit from the spectrum award in a number of ways, depending on the use made of the spectrum. For example business end-users could directly benefit from Fixed Wireless Access (FWA) and Programme Making and Special Events (PMSE) services. Consumers could also indirectly benefit from spectrum owners making use of the spectrum in a variety of services, including point-to-multipoint cellular and FWA network backhaul applications, PMSE applications and CCTV networks. As set out by Ofcom previously in its spectrum framework plan documents, Ofcom’s view is that where possible, citizen/consumer interests in relation to the allocation of spectrum are best served through spectrum trading and liberalisation.

Costs and benefits to business

- A3.47 Ofcom carried out a regulatory impact assessment for the Wireless Telegraphy (Register) Regulations 2004 (published December 2004), which established the Wireless Telegraphy Register. This proposed amendment to those regulations only has the effect of including the Bands within the regulations. Ofcom therefore considers that the same arguments apply in assessing the impact of these regulations as in the original regulations.
- A3.48 Accordingly, the conclusions of the RIA for the Wireless Telegraphy (Register) Regulations 2004 on the costs and benefits are equally valid for these regulations. Those conclusions were that the benefits of having a register exceeded the costs that would be incurred by Ofcom and business in establishing and maintaining the register, and in publishing information. Indeed, the costs to Ofcom of the proposed regulations will be even lower than the previous assessment because the register has been established and is being maintained anyway. The additional costs to Ofcom would be minimal and would be limited to updating the register for the Bands. The RIA also noted that if a register were not established, there was a real risk that the effectiveness of spectrum trading would be damaged, transaction costs for businesses wanting to trade spectrum could be higher, and that commercial information providers might not bring the same benefits as an independent register.

A3.49 Moreover, now that the register has been set up, the additional costs of including the Bands within the register should be very small. As a result, the benefits are even more likely to exceed the costs.

Business sectors affected

A3.50 The main business sectors likely to be affected by this proposal are fixed and mobile communications service provision and broadcast services. Ofcom believes that the net effect of the award on these businesses will be positive given the increased availability of spectrum necessary to support their retail and wholesale service provision.

A3.51 Other business sectors may benefit from a more efficient supply of communications services as a result of this proposal.

Conclusion

A3.52 Ofcom's assessment is that the benefits of including the Bands within the Wireless Telegraphy Register are likely to outweigh the costs. The benefits could be significant in terms of improving the effectiveness of potential spectrum trades and the costs would be minimal because the register has already been established.

A3.53 Ofcom believes that the auction will deliver net benefits arising from the efficient award and subsequent use of the spectrum. Ofcom believes that the auction is likely to lead to increased competition in downstream markets and benefit a number of business sectors and ultimately consumers and citizens for all types of transfer.

Regulatory Impact Assessment – The Wireless Telegraphy (Limitation of Number of Spectrum Access Licences) (No. 2) Order 2007

A3.54 The analysis set out in this document represents a Regulatory Impact Assessment ("RIA") following Ofcom's notice of proposals to make the Order¹⁹, published on 7 August 2007 (the "Notice"), and its statement on the Notice consultation²⁰.

A3.55 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. In producing the RIA in this document, Ofcom has had regard to such general guidance as it considers appropriate, including related Cabinet Office guidance.

Proposal, purpose and intended effect

A3.56 Following its consultation published on 29 June 2006 (the "June Consultation") and statement published on 7 August 2007 (the "August Statement") on the award of available spectrum: 10 GHz, 28 GHz, 32 GHz and 40 GHz²¹ (the "Bands"), Ofcom has decided to award licences by means of an auction.

¹⁹ Notice of Ofcom's proposal to make regulations in connection with the award of 10 GHz, 28 GHz, 32 GHz and 40 GHz, available at <http://www.ofcom.org.uk/consult/condocs/10-40notice/10-40notice.pdf>

²⁰ Published on 7 August 2007 and available at
Insert link <http://www.ofcom.org.uk/consult/condocs/10-40GHz/statement/statement.pdf>

²¹ The June Consultation and the August Statement are available at

- A3.57 Ofcom believes that consumers could benefit from the spectrum award in a number of ways, depending on the use made of the spectrum. For example business end-users could directly benefit from Fixed Wireless Access (FWA) and Programme Making and Special Events (PMSE) services. Consumers could also indirectly benefit from spectrum owners making use of the spectrum in a variety of services, including point-to-multipoint cellular and FWA network backhaul applications, PMSE applications and CCTV networks. As set out by Ofcom previously in its spectrum framework plan documents, Ofcom's view is that where possible, citizen/consumer interests in relation to the allocation of spectrum are best served through spectrum trading and liberalisation.
- A3.58 The Limitation Order to which this RIA relates is intended to allow Ofcom to limit the number of users of the Bands through the award of licences, as opposed to exempting from licensing the use of radio equipment in the Bands and so allowing an unlimited number of users.
- A3.59 This will enable Ofcom to proceed with the award of this spectrum by auction. The way that Ofcom will award a limited number of licences for the Bands is set out in the proposed Wireless Telegraphy (Licence Award) (No.2) Regulations 2007.

Costs and benefits to business

- A3.60 Ofcom's overall conclusion is that the relative costs imposed on business by limiting the number of licences in the Bands are lower than the costs of making use of the spectrum licence exempt.
- A3.61 The decision to license the Bands, as opposed to making their use licence exempt, imposes a relatively small administrative compliance cost on those businesses that would like to use the spectrum. However, if the use of the Bands were licence exempt, it would not be possible to impose any constraint on the number of users or to ensure that these users co-ordinated with each other. Ofcom's technical research has shown that this would impose large costs due to interference between users. These costs would generally outweigh the benefit of licence exemption.

Costs to Ofcom

- A3.62 The costs to Ofcom of limiting the number of licences in the Bands relate mainly to the costs of awarding the spectrum. Ofcom has made regulations to auction licences for the use of the Bands, therefore the costs to Ofcom would be those of carrying out an auction.
- A3.63 In comparison, licence exemption would mean that Ofcom would not incur auction costs. However, as discussed in the previous section, the costs to business is likely to be relatively higher under licence exemption because of the need to incur coordination costs to limit interference with other users and this would be unlikely to lead to the most efficient use of spectrum.
- A3.64 Ofcom also notes that the administrative costs of holding the auction are likely to be small in relation to the benefit generated for the economy.

Business sectors affected

- A3.65 The main business sectors likely to be affected by this proposal are fixed and mobile communications service provision and broadcast services. Ofcom believes that the net effect of the award on these businesses will be positive given the increased availability of spectrum necessary to support their retail and wholesale service provision.
- A3.66 Other business sectors may benefit from a more efficient supply of communications services as a result of this proposal.

Conclusion

- A3.67 Ofcom has assessed the impact of limiting or not limiting the number of licenses in the Bands and has concluded that the better option is to limit the number of licences. This is primarily because the number of users that would be likely to use the spectrum under licence exemption is large and would lead to all users incurring substantial costs in terms of interference and co-ordination with other users.
- A3.68 Ofcom believes that the auction will deliver net benefits arising from the efficient award and subsequent use of the spectrum. Ofcom believes that auction is likely to lead to increased competition in downstream markets and benefit a number of business sectors and ultimately consumers and citizens for all types of transfer.